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*JOINT FORCES STAFF COLLEGE*  
JOINT ADVANCED WARFIGHTING SCHOOL



**ANYTHING BUT: JOINT AIR-GROUND TRAINING AT THE U.S. ARMY  
GROUND COMBAT TRAINING CENTERS**

by

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**Lieutenant Colonel, United States Air Force**

**A paper submitted to the Faculty of the Joint Advanced Warfighting School in partial satisfaction of the requirements of a Master of Science Degree in Joint Campaign Planning and Strategy.**

**The contents of this paper reflect my personal views and are not necessarily endorsed by the Joint Forces Staff College or the Department of Defense.**

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## **ABSTRACT**

Since the United States Army acquired its first Wright flyer and integrated the airplane into battle, the role of airpower has been a constant source of friction between ground and air forces. Army and Air Force cultures, doctrines, shared experiences, and fratricide incidents involving close air support (CAS) have all helped shape the tenuous relationship between the two Services. Since the end of the 1991 Gulf War, there have been 13 CAS fratricide events, killing or injuring 197 people. In all but one instance, training was a causal factor. Yet, there is no formal requirement for joint CAS training.

In the early 1980's with the establishment of the U.S. Army ground combat training centers and the corresponding U.S. Air Force Air Warrior training programs, the Services began habitual close air support training. However, with the shift from medium intensity conflict to counter-insurgency and stability operations, pre-deployment CAS training at the CTC's has nearly ceased. While there has not been an increase in fratricide corresponding to this decrease in training, the integration of CAS has decreased and the potential for a fratricide event has increased. The Army and the Air Force must increase their focus on improving joint CAS training as the lives of U.S. soldiers may well depend upon the effectiveness of CAS to hit the correct targets while supporting their operations.

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## TABLE OF CONTENTS

<b>ABSTRACT.....</b>	<b>i</b>
<b>ACKNOWLEDGMENTS .....</b>	<b>ii</b>
<b>TABLE OF CONTENTS .....</b>	<b>iii</b>
<b>LIST OF ABBREVIATIONS .....</b>	<b>iv</b>
<b>INTRODUCTION.....</b>	<b>1</b>
Thesis .....	6
Limitations .....	6
Methodology .....	7
<b>CHAPTER 1 CLOSE AIR SUPPORT; WHY SO DIVISIVE? .....</b>	<b>9</b>
What is Close Air Support .....	9
Historical Review of Army/Air Force Integration.....	10
<b>CHAPTER 2 BARRIERS TO JOINT CAS TRAINING .....</b>	<b>40</b>
Service Cultures: Roles, Missions, and Doctrine.....	41
Force Structure.....	50
Joint Training at the Combat Training Centers.....	57
<b>CHAPTER 3 ENABLERS TO JOINT AIR-GROUND TRAINING .....</b>	<b>64</b>
Joint Effects Training.....	64
BCT Air-Ground Integration .....	66
<b>CHAPTER 4 RECOMMENDATIONS AND CONCLUSIONS.....</b>	<b>69</b>
Recommendations to Improve Joint CAS Training.....	70
Conclusions.....	75
<b>APPENDIX A: CAS FRIENDLY FIRE EVENTS .....</b>	<b>78</b>
<b>APPENDIX B: GREEN FLAG UTILIZATION RATES .....</b>	<b>79</b>
<b>BIBLIOGRAPHY .....</b>	<b>81</b>
<b>VITA.....</b>	<b>88</b>

**LIST OF ABBREVIATIONS**

ACC	Air Combat Command
AFDD	Air Force Doctrine Document
AI	Air Interdiction
ASOS	Air Support Operations Squadron
BCT	Brigade Combat Team
CAS	Close Air Support
CTC	Combat Training Center
DOD	Department of Defense
DODD	Department of Defense Directive
FM	Field Manual
GAO	Government Accounting Office
HASC	House Armed Services Committee
JCAS ESC	Joint Close Air Support Executive Steering Committee
JCAS JT&E	Joint Close Air Support Joint Test and Evaluation
JFIIT	Joint Fires Integration and Interoperability Team
JTAC	Joint Terminal Attack Controller
JOC	Joint Operations Center
JP	Joint Publication
JRTC	Joint Readiness Training Center
NTC	National Training Center
TAC	Tactical Air Command
TACP	Tactical Air Control Party
TRADOC	Training and Doctrine Command



## INTRODUCTION

*Fratricide or casualties to friendly forces caused by friendly fire, is an unwanted consequence of warfare...Although occasionally the result of malfunctioning weapons, fratricide has usually been the result of confusion on the battlefield. Causes include misidentification of targets, inaccurate target locations or descriptions, target locations incorrectly transmitted or received, and loss of situational awareness by JTACs, CAS aircrews, requestors, battle staff, or commanders. Items such as detailed mission planning, standardized procedures for friendly force tracking and supporting immediate air requests, and realistic training/mission rehearsal...can significantly reduce the likelihood of fratricide.<sup>1</sup>*

- Joint Pub 3-09.3

Since the introduction of the airplane into military operations, airpower has played an important role in the conduct of war, both in its ability to attack in depth and in its support of friendly ground forces. The initial growth of airpower as a weapon of war was in direct support of ground forces during World War I. Shortly thereafter, early air power theorists such as Giulio Douhet and Billy Mitchell changed the emphasis away from support to ground troops, envisioning vast air armadas that could avoid stalemates on the ground and strike an enemy's political and military centers with strategic bombardment.<sup>2</sup> While ground and air forces have worked together in all major conflicts since World War I, the US Army and US Air Force have continuously disagreed on how airpower best supports ground forces.

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<sup>1</sup> Joint Chiefs of Staff. *Joint Publication 3-09.3, Joint Tactics, Techniques, and Procedures for Close Air Support (CAS)*, (Washington D.C.: Joint Chiefs of Staff, 2005), I-4. Hereafter referred to as JP 3-09.3.

<sup>2</sup> Lewis, Michael. *LT GEN Ned Almond, USA: A Ground Commander's Conflicting View With Airmen Over CAS Doctrine* (Master's Thesis, Maxwell Air Force Base: School of Advance Air Power Studies 1996), 14.

Prior to the Second World War, most Army generals believed the best use of airpower was to support ground troops by adjusting field artillery, conducting reconnaissance, providing real time intelligence, and providing close combat support. Airpower enthusiasts believed that after achieving air superiority, air forces should concentrate their efforts and use strategic bombing to attack the enemy's centers of gravity; thereby, destroying their ability and desire to wage war. Current US close air support doctrine can trace its foundations to North Africa during World War II.<sup>3</sup> Years of neglect and intra-service rivalry left US forces unprepared for integrated air-ground operations in the deserts of North Africa. Initial integration efforts were disorderly and were most successful at increasing tensions between ground and air commanders.<sup>4</sup> As the war continued, the Army made improvements to its close air support (CAS) system and commanders began planning for CAS in support of their operations and learned that CAS made a significant difference during operations in Sicily, Italy, and later in France.<sup>5</sup> In 1947, US air power advocates successfully lobbied for an independent Air Force, but were unable to relinquish the responsibility to provide air support to ground forces. History has shown the demand for CAS remaining constant in every major US military action since World War II. While CAS was a crucial component during operations in Korea, Vietnam, Kuwait, Afghanistan, and Iraq, each operation also experienced some form of air-to-ground friendly fire incident.

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<sup>3</sup> Syrett, David. "The Tunisian Campaign, 1942-43" In *Case Studies in the Development of Close Air Support*, edited by Benjamin Franklin Cooling (Washington D.C.: United States Air Force, 1990), 153.

<sup>4</sup> *Ibid*, 178.

<sup>5</sup> Hasken, MAJ Scott A., USA. *A Historical Look at Close Air Support* (Master's Thesis, Ft. Leavenworth: US Army Command and General Staff College, 2003), 9.

The phrase “friendly fire” is perhaps the most ominous term in the CAS vocabulary. From the first day of training, individuals involved in the planning and execution of CAS have it implanted in their psyche that fratricide is tantamount to mission failure.<sup>6</sup> Since the end of the 1991 Gulf War, forty-seven people have been killed or injured during five close air support training accidents. Additionally, since combat operations began in Afghanistan and Iraq there have been eight CAS friendly fire incidents resulting in the death or injury of one-hundred and forty-eight people. Subsequent investigations revealed that all but one of these incidents resulted from a failure to follow standardized procedures (see Appendix A). The single anomaly was the result of human error caused by a loss of situational awareness.<sup>7</sup> While a review of the data in Appendix A shows only 4 of the 13 incidents involved the Army and the Air Force, the broader issue is that the failure of current joint training may cause an increase in Army-Air Force incidents.

Practical experience has shown the best way to ensure someone comprehends and follows specific procedures is through a comprehensive training program. Inappropriate application of CAS procedures resulting from poor joint training increases the potential for friendly fire incidents. A 2003 General Accounting Office (GAO) report determined that four lingering issues inhibit and often prohibit realistic close air support training. First, ground and air forces have limited opportunities to train together. Second, due to the small size of most home station training areas, the training is often repetitive,

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<sup>6</sup> Elsarelli, Maj Leon E., USAF. *From Desert Storm to 2025: Close Air Support in the 21st Century* (Maxwell Air Force Base: Air Command and Staff College, 1998), 19.

<sup>7</sup> United States Joint Forces Command. "Friendly Fire Data." (Joint Capabilities Integration and Fires Division, HQ USJFCOM J-85, 2008), NP.

restrictive, and unrealistic. Third, the Services use different certification and training standards for their terminal attack controllers. Fourth, within the Services, close air support training is often a lower priority mission.<sup>8</sup>

In response to the GAO report, the Department of Defense (DoD) began actively pursuing methods to alleviate the training shortfalls identified. It established the Joint Close Air Support Executive Steering Committee (JCAS ESC) to oversee the JCAS doctrinal and training issues.<sup>9</sup> One of the first actions the JCAS ESC accomplished was producing the Joint Terminal Attack Controller (JTAC) Memorandum of Agreement (MOA). This agreement between all US Services defines the training required to be a JTAC and standardizes JTAC certification and qualification requirements.<sup>10</sup> Solving the controller qualification issue is only a partial solution, especially if JTACs do not have the opportunity to train effectively in a joint environment.

Both the Army and Air Force commit a tremendous amount of time and resources to conducting mission rehearsal exercises. The US Army primarily conducts pre-deployment training at one of two ground combat training centers (CTCs) either at the National Training Center (NTC) in the deserts outside of Barstow, California, or the Joint Readiness Training Center (JRTC) near Leesville, Louisiana. US Air Force strike assets deploying in support of Operations ENDURING FREEDOM and IRAQI FREEDOM accomplish their pre-deployment training via Air Combat Command's GREEN FLAG

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<sup>8</sup> General Accounting Office. *Lingering Training and Equipment Issues Hamper Air Support of Ground Forces* (Military Readiness, Washington D.C.: United States Government, 2003), 2.

<sup>9</sup> United States Joint Forces Command. "Joint Close Air Support (JCAS) Standardization and Interoperability." *ACT Fratricide Prevention IPT*, edited by Fratricide Prevention IPT (November 18, 2008. <http://transnet.act.nato.int/WISE/FPIPT/Conference0/JCASstanda>, accessed December 28, 2008), slide #3.

<sup>10</sup> *Ibid*, slide #9.

exercise program either at Nellis Air Force Base, Nevada, or Barksdale Air Force Base, Louisiana. To provide the maximum opportunity for joint air-ground integration, GREEN FLAG exercises happen concurrently with Army mission rehearsal training occurring at the CTCs. Ironically, while these venues provide unsurpassed joint training opportunities, the amount of joint air-ground training conducted there has declined significantly since 2003.

Between January 1999 and June 2002, the Joint Close Air Support Joint Test & Evaluation (JCAS JT&E) test force monitored thirteen brigade and regimental training rotations at the US Army's National Training Center. During this period, the JCAS report stated 32% of the aircraft supporting NTC training departed without releasing ordnance for a 68% CAS utilization rate.<sup>11</sup> A review of the CAS aircraft utilization rates for the period covering 2007 and 2008 (see Appendix B) shows a dramatically different story. While data shows overall sortie utilization rates of 41.1% at the NTC, the actual CAS utilization rate was 9.0%.<sup>12</sup> This seven-fold reduction in joint CAS training events manifests itself in ground combat units that are unwilling or unable to employ close air support (CAS) assets properly, thereby decreasing combat effectiveness and increasing the potential for fratricide in theater.

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<sup>11</sup> Office of the Secretary of Defense. *Joint Close Air Support Interim Report 2002* (Eglin AFB: JCAS Joint Test Force, 2002), 4-10. Sortie utilization rate is the percentage of sorties used to support rotational BCT training of the total number of sorties made available (Example: 10 sorties were made available and 4 sorties were used by the rotational training unit the utilization rate would be 40%). Missions performed include but are not limited to CAS, convoy escort, counter-IED route clearance, and non-traditional ISR. The CAS utilization rate is calculated in the same manner but include only those sorties that perform and achieve lethal close air support effects.

<sup>12</sup> Delong, Yale J., interview by author. Air Combat Command Green Flag Program (January 28, 2009).

## **Thesis**

In the twenty years prior to and during the initial stages of operations in Afghanistan and Iraq, the US Army and Air Force forged an effective close air support training partnership. However, with the shift from medium intensity conflict to counter-insurgency and stability operations, predeployment CAS training has nearly ceased. The 2003 GAO report identified four impediments to joint close air support training (1) the limited opportunities to train together, (2) small size of most home station training areas, (3) different certification and training standards for JTAC's, and (4) the low priority of close air support training. The Services have already addressed the standardization and training of JTAC's, and the process of identifying which additional military training areas can and should be increased in size, is a topic in its own right. Several barriers exist that combine to limit the effectiveness of pre-deployment CAS training manifesting itself at the CTC's. Unless the Services acknowledge and work to correct these problems, units conducting mission rehearsal training at the National Training Center and the Joint Readiness Training Center will forfeit their singular opportunity for valuable joint CAS training and may ultimately risk mission success while increasing the potential for fratricide.

## **Limitations**

While the GAO listed four problem areas, the Services have already addressed the standardization and training of JTAC's. Therefore, this thesis will focus on the limited joint training opportunities at the CTC's and on why CAS training is a low priority task that often goes unaccomplished, even when the limited assets are available. Specifically it will focus on joint training at the National Training Center and the Joint Readiness

Training Center. These training venues are where the preponderance of Army-Air Force joint close air support training occurs. While CAS training does occur at the United States Marine Corps Training Center, Twentynine Palms, this thesis will not address joint training there, since a majority of the training conducted there is service centric and not inherently joint.

### **Methodology**

To understand why many see close air support as a contentious issue between the Army and the Air Force, Chapter 1 of this thesis will provide a historical look at Army Air Force close air support training, combat integration, and Army-Air Force agreements significant to CAS. Chapter 2 will examine barriers to joint training, including service cultures; review how changing service force structures inhibits joint training; and then analyze service perspectives on joint CAS training at the CTC's. Chapter 3 will highlight current joint training initiatives that are enhancing Army and Air Force interoperability. Finally, Chapter 4 will make recommendations on how to improve Joint CAS training.

It is important to note that the author is a career CAS pilot with over 2,500 hours of flight time in the A-10 and OV-10, as well as combat experience as a ground forward air controller in Desert Storm and a pilot performing CAS during Operation Iraqi Freedom. Additionally, he served as the commander of the 549<sup>th</sup> Combat Training Squadron and was responsible for the planning and execution of Air Force close air support training at the NTC. The intent of this research was for it not to be a "soapbox" for promoting a particular service view at the expense of others, but to provide a truly critical look at effectiveness of the joint air-ground training being conducted at the combat training centers. Throughout this effort, the author made every attempt to

recognize and temper potential biases. While it is hoped this research is of interest to all who plan and conduct joint air-ground training, it is of greater importance to those who ultimately are engaging in joint-air ground operations. The military Services and the nation cannot continue to allow preventable fratricides to continue when relatively straightforward actions to correct known problems in training lie at our fingertips.



## Chapter 1

### Close Air Support; Why So Divisive?

*Experience in this war has proved beyond doubt that all modern military operations are in fact combined Army/Air operations. Consequently our working system must be one by which two independent Services can operate smoothly and efficiently in what is fundamentally a common task. This automatically implies a process of negotiation rather than of authority, and a satisfactory solution is no easy matter.*<sup>13</sup>

*-Field Marshall Bernard L. Montgomery*

### What is Close Air Support

No contemporary military subject has been as written about or sparked so much tension between air and ground forces as close air support. Prior to examining why current joint CAS training is less than optimum, it is important to understand what close air support is and why it is such a controversial issue. Joint doctrine defines close air support as “air action by fixed- and rotary-wing aircraft against hostile targets that are in close proximity to friendly forces that require *detailed integration* of each air mission with the fire and movement of those forces.”<sup>14</sup> Not only is this US doctrine, it is also accepted by the North Atlantic treaty Organization (NATO) and the Southeast Asia Treaty Organization (SEATO), although they use the term “air attacks” in-lieu of “air actions”.<sup>15</sup> The definition alone is not the reason for the tension, but when and how the

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<sup>13</sup> Montgomery, Bernard L. *Some Notes on the use of Air Power in Support of Land Operations and Direct Air Support* (Holland: Allied Forces 21st Army Group, 1944), 2.

<sup>14</sup> Joint Chiefs of Staff. *Joint Publication 1-02, Department of Defense Dictionary of Military and Associated Terms* (Washington D.C.: Joint Chiefs of Staff, 2008), 92.

<sup>15</sup> Cooling, Benjamin F. *Case Studies in the Development of Close Air Support* (Washington D.C.: United States Air Force, 1990), 1.

air services provides that “air action,” is the foundation of the discord between the Army and Air Force. Throughout the history of close air support, there is a recurring theme where coordination and cooperation between the Army and Air Force during periods of military conflict usually led to extremely effective CAS integration. The periods between wars typically saw an increase in friction and interservice rivalry, which often offset the advances made in air-ground integration.

### **Historical Review of Army/Air Force Integration**

While the core of this section focuses on Army-Air Force close air support following the establishment of the Air Force, the initial portions will quickly cover the period from World War I through World War II. It is important to mention this period since Army and Air Force cultural biases towards close air support and each other were borne out of this time. During World War I, airpower advocates favored using aircraft to support ground forces, even though ground support units on all sides experienced above-average losses in pilots and aircraft. Instead of abandoning the air support mission, those heavy losses caused the air arms of the combatants to look for an airplane type that could do the mission and survive.<sup>16</sup> Following World War I, American airpower theory initially continued this focus on tactical aviation. Future strategic attack advocate, General William “Billy” Mitchell, wrote *Provisional Manual for the Operations of Air Units*, in 1918.<sup>17</sup> Seeking to capture lessons learned from the war, he placed special

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<sup>16</sup> Campbell, Douglas N. *Plane in the Middle: A History of the U.S. Air Force's Dedicated Close Air Support Plane* (PhD Thesis, Lubbock: Texas Tech University, 1999), 19.

<sup>17</sup> Kennett, Lee. "Developments to 1939." In *Case Studies in the Development of Close Air Support*, edited by Benjamin Franklin Cooling (Washington D.C.: United States Air Force, 1990), 42.

emphasis on ground attack even noting, the psychological effects of low-flying attack aircraft upon both friendly and enemy ground forces.<sup>18</sup>

The demand for establishing an independent air service began in the early 1920's and was nearly simultaneous with the development of strategic bombing doctrine and theory. In 1923, the Chief of the Air Service authorized a study on attack doctrine, which concluded that performing direct aerial support for ground troops should happen only in extreme circumstances.<sup>19</sup> In the 1930 Air Corps Tactical School text, *The Air Force*, the declaration that "the air force does not attack objectives on the battlefield or in the immediate proximity thereof, except in the most unusual circumstances,"<sup>20</sup> reinforced the waning role of ground attack. In 1937, while addressing the U.S. Army War College, Brigadier General Henry H. Arnold, clearly articulated the airman's fear of becoming flying artillery when he said, "Do not detach the air force to small commands where it will be frittered away in petty fighting. Hold it centrally and use it in its proper place, that is, where it can exert its power beyond the influence of your other arms, to influence general action rather than the specific battle."<sup>21</sup> By 1939, the Air Corps Tactical School

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<sup>18</sup> Kennett, 43.

<sup>19</sup> Office of the Chief of Air Service, staff study, 1923, page 2, as cited in Maj Gary Cox, USAF, "Beyond the Battle Line: US Air Attack Theory and Doctrine, 1919-1941," (Maxwell Air Force Base: School of Advanced Airpower Studies, 1996), 16.

<sup>20</sup> *The Air Force*, ACTS Text, 1930, page 70, 82, as cited in: Kennett, Lee. "Developments to 1939." In *Case Studies in the Development of Close Air Support*, edited by Benjamin Franklin Cooling (Washington D.C.: United States Air Force, 1990), 47.

<sup>21</sup> Kennett, 48.

had dropped the term “attack” from its ground attack manuals in favor of the more bomber friendly term, light bombardment.<sup>22</sup>

While strategic bombing became the primary focus of the Air Corps in 1930's, it is a gross mischaracterization to state that it was the only focus of the Air Corps. In June 1940, reacting to the successes of the *Luftwaffe* during the German invasions of Poland and France, General Arnold created two groups of dive-bombers much like the *Luftwaffe's Stukas*.<sup>23</sup> Additionally, in 1941 the Army conducted large-scale training exercises in the southeastern United States, designed to assess and develop an effective air-ground structure. The central component to the ground-air support system was the air support command. Yet, no one knew what roles an air support command was perform or what forces it would have.<sup>24</sup> These exercise demonstrated the existing air support structure prior to WWII was cumbersome and extremely inefficient.<sup>25</sup> Even with these focused training events, the US Army entered World War II unprepared to perform air support.

Incredibly, the same air support command model that was so ineffective during the large scale training exercises prior to US involvement in WWII became Army doctrine in 1943 with the publishing of FM 31-35, *Aviation Support to Ground Forces*. FM 31-35 formalized the air support command construct, but the only aircraft provided to

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<sup>22</sup> *Ibid*, 52.

<sup>23</sup> Kennett, 52.

<sup>24</sup> Futrell, Robert Frank. *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force, 1907-1960, vol. I* (Maxwell Air Force Base: Air University Press, 1989), 107.

<sup>25</sup> Hasken, 8.

the air support commander were observation aircraft.<sup>26</sup> Since the primary provider of air support to the ground forces did not have any attack capability, this led to a disjointed integration of air-support, as target prioritization would differ from commander to commander.<sup>27</sup> The air support commander construct outlined in FM 31-35 was used in air-ground operations during in North Africa with uninspiring results.

Responding to the failures of air-ground integration in Tunisia, General Dwight D. Eisenhower, the Allied Commander-in-Chief in North Africa, modified the air command and control structure by placing all allied air forces under the control a single person, British Marshall Sir Arthur Tedder. Tedder, along with his principle deputies Major General Carl A. Spaatz, the Commander of Northwest African Air Forces, and British Air Marshall Sir Arthur Coningham, the Commander of Allied Tactical Air Forces, under Spaatz, implemented lessons learned by RAF in their previous battles against German forces in North Africa.<sup>28</sup> They believed that all air assets must be under a single air commander and ended the practice of dividing airpower into small packets and subordinating it to a ground force commander. They reprioritized tactical air efforts in the theater, focusing first on the Luftwaffe, then interdicting German supplies and finally turning their efforts to German frontline troops. This ability to rapidly change missions from air-to-air, to interdiction, then to close support, clearly demonstrated air powers inherent flexibility.

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<sup>26</sup> War Department. *FM 31-35, Aviation in Support of Ground Operations* (Washington D.C.: Government Printing Office, 1942), Chapt. 1, para 2.a.

<sup>27</sup> Futrell, *Ideas, Concepts, Doctrine*, vol. I, 137.

<sup>28</sup> Hasken, 11.

The inherent flexibility of airpower and its role in the Army was codified in the July 1943 War Department Filed Manual 100-20, *Command and Employment of Air Power*. FM 100-20 stated, “Control of available air power must be centralized and command must be exercised through the Air Force commander if this inherent flexibility and ability to deliver a decisive blow are to be fully exploited.”<sup>29</sup> On the first page of FM 100-20, in capital letters, is the statement “LAND POWER AND AIR POWER ARE CO-EQUAL AND INTERDEPENDENT FORCES; NEITHER IS AN AUXILIARY OF THE OTHER.”<sup>30</sup> There is a perception among many that the US Army Air Forces (USAAF) adopted strategic bombing as its preferred mission to justify the creation of an independent Air Force.<sup>31</sup> Based on its size, scope, and mission during WWII, the USAAF was an independent service in all but statute. This independence combined with the success of tactical airpower contributed as much, if not more, to the War Department acknowledging landpower and airpower are co-equals.

Following World War II, On July 26, 1947, President Truman signed the National Security Act of 1947 (NSA '47) as well as Executive Order 9877 directing the implementation of the National Security Act. On September 15, 1947, the Army saw virtually all of its aircraft and a significant portion of the Army Air Forces personnel cut from its rolls to create the US Air Force.<sup>32</sup> The independent service that airpower

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<sup>29</sup> War Department. *FM 100-20, Command and Employment of Air Power* (Washington DC: US Government Printing Office, 1943), 1. Hereafter referred to as FM 100-20

<sup>30</sup> *FM 100-20*, 1.

<sup>31</sup> Futrell, *Ideas, Concepts, Doctrine*, vol. I, 168.

<sup>32</sup> Wolf, Richard I. *The United States Air Force: Basic Documents on Roles and Missions* (Washington DC: United States Air Force, 1987), 91.

advocates wanted was here. While written together, the executive order implementing NSA '47 did not mirror changes that occurred as the Act worked its way through Congress. Strongly believing in the importance of the legislation, President Truman wanted to sign both the act and order together, immediately after passage of the bill. This meant there was no opportunity to ensure the executive order was consistent with the legislation.<sup>33</sup> This disconnect would lead to problems between the Army and the newly independent Air Force.

While there were many subtle discrepancies between the act and the order, a major area of conflict was what role the Air Force would have in the other Services' remaining aviation endeavors. While allowing the Army to retain some "organic" aircraft, such as small liaison aircraft and helicopters, the 1947 National Security Act did not delineate what roles those aircraft could perform.<sup>34</sup> Additionally, the act limited naval air transport forces essential for naval operations. While the executive order limited the Navy to aircraft for reconnaissance, antisubmarine, and protection of shipping, it did not specify what types of aircraft could perform those roles. Regarding air transportation, the order limited the Navy to assets needed for administration and "over routes of sole interests to the naval forces." While these discrepancies did not directly affect close air support, they did allow the Services to pursue aviation endeavors that at times conflicted with another service's enterprise. These discrepancies would serve as the undercurrent for other continuous disagreements between the Services, resulting in many formal

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<sup>33</sup> *Ibid*, 85.

<sup>34</sup> *National Security Act of 1947*, Public Law 253, 80<sup>th</sup> Cong., 1<sup>st</sup> sess. (July 26, 1947) §205(e).

attempts to spell out the types of aircraft each service would utilize and what roles they could perform.<sup>35</sup>

*Key-West Agreement,*

In January 1948, Secretary of Defense James Forrestal, recognizing the differences and potential problems between the National Security Act and the Executive Order sent a proposed redraft of the Executive Order to the service secretaries and the Joint Chiefs of Staff. The redraft did not provide clear-cut guidance and the JCS had not completed necessary strategic planning on mission assignments; therefore, Secretary Forrestal withdrew his proposed redraft in February. In March 1948, Secretary Forrestal and the service chiefs met at Key West Naval Base in an attempt to establish the primary functions of each service and where possible eliminate duplication of service capabilities.<sup>36</sup> The resulting “*Functions of the Armed Forces and the Joint Chiefs of Staff*”, more commonly known as the Key West Agreement, directed the Air Force to provide “close combat and logistical air support to Army.”<sup>37</sup> This agreement did not prohibit the Army from using its own organic rotary or fixed wing aircraft to perform close air support. On April 21, 1948, President Truman repealed Executive Order 9877, setting the stage for Secretary Forrestal to direct the Services to follow the roles and missions established during the Key West Conference.<sup>38</sup>

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<sup>35</sup> Wolf, 151.

<sup>36</sup> *Ibid*, 151.

<sup>37</sup> Forrestal, James. "Functions of the Armed Forces and the Joint Chiefs of Staff" (Washington D.C.: Secretary of Defense, April 21, 1948), Sect. 4.A.5.

<sup>38</sup> Wolf, 152.



While the Key West Agreement formalized the primary roles of the Services, it did not resolve all inter-service discord, and left unanswered what constituted organic aircraft for the Army and what roles those aircraft could perform. More specifically, it did not prohibit the Army from conducting CAS with its organic aircraft. The 1949 Bradley-Vandenberg Agreement was the first significant agreement between the Army and Air Force setting size constraints and identifying what roles Army aircraft could perform. This agreement allowed the Army to own and maintain fixed-wing aircraft, not to exceed 2,500 lbs, and rotary-wing aircraft, not to exceed 4,000 lbs. While imposing weight restrictions, the Bradley-Vandenberg Agreement did not specify what roles these aircraft were to perform. Not until the 1951 agreement between Secretary of the Army Frank Pace Jr., and Secretary of the Air Force Thomas K. Finletter, did the Services define or specify what constituted “organic” aircraft” and what functions they could perform.<sup>39</sup>

#### *Air-Ground Integration from Post-World War II through Korea*

Building upon its role in ending the war with Japan, the USAF’s desire to remain the linchpin of the US’s nuclear arsenal would guide its efforts in the post World War II era. The birth and rapid growth of Strategic Air Command clearly demonstrated the importance of strategic bombardment to the Air Force. The Air Force developed a plan for a 70-group force of which better than 50% of the combat forces were bombers.<sup>40</sup> While Executive Order 9877 made the Air Force responsible for providing air support to

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<sup>39</sup> *Ibid*, 237.

<sup>40</sup> Futrell, *Ideas, Concepts, Doctrine*, vol. I, 204.

the Army, the service was guilty of not committing any resources to the ground support role and instead focused its tactical air efforts towards the training and equipping of pilots for the air-to-air mission.<sup>41</sup>

Despite its emphasis on the air-to-air mission, the Air Force did not completely neglect its air-to-ground role. The Army and Air Force held a series of eight joint exercises designed to review and revise joint air-ground doctrine. Based upon the lessons learned during these exercises, Headquarters Tactical Air Command recommended the Army review and rewrite Army Field Manual (FM) 31-35, *Air-Ground Operations*, to clarify command and control roles and responsibilities, but these changes never made it into doctrine.<sup>42</sup> The recognition of the need to hold joint tactical exercises in the late 1940's is one of the few bright spots in joint close air support training. However, these exercises focused on weapon system testing, doctrine development, or validating a service perspective in the growing inter-service rivalry over close air support. These events did not result in a recurring CAS training program. It would take the right combination of personalities and doctrinal acceptance to establish a long-term Army-Air Force CAS exercise program. When the Korean War started, the adolescent US Air Force would find its training and execution of CAS to be wanting.<sup>43</sup>

Despite limited doctrinal efforts, the training and equipping of the tactical air forces flying prior to Korea centered on air-to-air combat. Therefore, when the war

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<sup>41</sup> Millett, Allan R. "Korea, 1950-1953" in *Case Studies in the Development of Close Air Support* edited by Benjamin Franklin Cooling (Washington D.C.: United States Air Force, 1990) 361-62.

<sup>42</sup> Millett, 349.

<sup>43</sup> Millett, 353.

began Air Force pilots were ill prepared for the intricacies of close air support missions. Additionally, the F-80 and F-84 aircraft initially used to perform close air support were designed for air-to-air combat and ill equipped for operations in an underdeveloped theater like Korea. Given the long takeoff and landing distances required by the F-80's and F-84's, they could not operate from the short and rough fields within the Korean territory held by United Nations forces. Moreover, these air-to-air aircraft had relatively small fuel loads and high fuel consumption rates. Flying longer distances from Japan increased the fuel requirements while reducing their bomb carrying capacity and further limiting the jets' time to work battlefield problems.<sup>44</sup> Realizing that rough airfields, short loiter times, and small bomb loads were severely hampering CAS efforts, the Air Force removed 30 F-51's<sup>45</sup> from long term storage and transferred another 145 F-51's aircraft from the Air National Guard for use in Korea.<sup>46</sup>

Confusing command and control of tactical aircraft exacerbated the inefficiencies of fighter aircraft providing ground support. Shortly after World War II, the Army refined its air-ground doctrine and standardized air-ground operations. The 1946 version of FM 31-35, mirrored the procedures utilized by the US 12<sup>th</sup> Army Group and Ninth Air Force in Europe.<sup>47</sup> FM 31-35 stated that the tactical air commander coordinated the apportioning of airpower between interdiction and CAS along with the army commander.

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<sup>44</sup> Campbell, Douglas N. *Plane in the Middle: A History of the U.S. Air Force's Dedicated Close Air Support Plane* (PhD Thesis, Lubbock: Texas Tech University, 1999), 60.

<sup>45</sup> Following World War II, the US Air Force changed all "P" (pursuit) designations to "F" (fighter) designations so the Mustang was re-designated the F-51.

<sup>46</sup> Boyne, Walter J. *Beyond the Wild Blue* (New York: St. Martin's Press, 1997), 73.

<sup>47</sup> Millett, 347.

These two commanders would establish a Joint Operations Center (JOC) to lead this coordination effort. Additionally, FM 31-35 called for all CAS sorties flown to have the approval of both the air and ground commanders. Therefore, the tactical air force commander, who coordinated on sortie apportioning also had sortie execution approval authority. Therefore, a single air commander was able to exert complete influence over all aspects of the CAS system and the support provided to the ground forces.<sup>48</sup>

The Air Force tactical air command and control system in Korea matured throughout the conflict. The first major change was adopting of the US Marine Corps tactical air control party concept (TACP). Marine TACP's were comprised of 10 personnel who would request and control CAS missions.<sup>49</sup> The Air Force adopted the Marine model, but after portions of two TACP's were lost in combat, TACP's were not allowed forward of the infantry regimental headquarters. This change limited the Air Force TACP's to serving purely as liaisons who would forward air support requests back to the JOC. The responsibility for providing attack control during strikes shifted to the members of the 6147<sup>th</sup> Tactical Control Squadron (Airborne). Known by their radio call sign, "Mosquito", the introduction of airborne controllers was another CAS improvement in Korea. By the end of 1950, the Mosquitoes controlled "90 percent of Air Force close air support sorties."<sup>50</sup>

The Air Force's focus on strategic bombing and air-to-air combat combined with a cumbersome command and control system to make close air support a divisive issue

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<sup>48</sup> *Ibid*, 348.

<sup>49</sup> *Ibid*, 351.

<sup>50</sup> Millett, 364.

throughout the Korean War. While there were many CAS successes during the Korean War, those successes “were shrouded by the realities of two separate Services with differing ideologies about tactical air support.”<sup>51</sup> This divisiveness would contribute to the continuing interservice conflict over close air support requiring many years and several formal agreements to try to overcome.

In October 1951, following extensive negotiations between the Army and Air Force staffs, Secretary of the Army Frank Pace and Secretary of the Air Force Thomas Finletter signed an agreement outlining the size and types of aircraft that were organic to the Army, what roles those aircraft would perform, and where on the battlefield they could perform those roles. The agreement maintained that the Army could employ aircraft necessary for the conduct of land operations. Additionally, the agreement limited Army fixed wing aircraft to light utility aircraft that operated within the Army combat zone and only if they did not duplicate functions the Air Force was providing.<sup>52</sup> The agreement further defined the combat zone as the area required by the field forces to conduct their operations, normally not exceeding 70 miles in depth. This memorandum was the first of several revisions to the Key West Agreement attempting to define and restrict the role, purpose, and capabilities of Army aviation.<sup>53</sup>

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<sup>51</sup> Hasken, 30.

<sup>52</sup> Pace Jr., Frank, Secretary of the Army, and Secretary of the Air Force Thomas K. Finletter. "Pace-Finletter Agreement, 2 October 1951" in *The United States Air Force: Basic Documents on Roles and Missions*, by Richard I. Wolf (Washington D.C.: United States Air Force, 1987), para. 2.

<sup>53</sup> Luke, Major Bryan K., USA. *Will Close Air Support be Where Needed and When to Support Objective Force Operations in 2015* (Master's Thesis, United States Army Command and General staff College, Ft. Leavenworth: School of Advanced Military Studies, 2002), 14.

On the surface, the 1951 agreement appeared to settle the differences between the Services. However, the Army continued acquiring more and larger helicopters that were increasingly more capable. These acquisitions were bothersome to the Air Force, prompting another round of discussions and a second agreement between the service secretaries.<sup>54</sup> The second Pace-Finletter agreement reestablished the fixed-wing weight restriction, but increased it to 5,000 lbs. Additionally, recognizing the rapid technological advancements in aviation the weight limit was subject to review by the Secretary of Defense, upon the request of either service secretary. The agreement also expanded the combat zone to 100 miles and expanded the missions Army aviation could perform to include aeromedical evacuation within the battle zone and artillery and topographic survey. This second agreement also contained the same language mandating there be no duplication of effort between the Army and Air Force.<sup>55</sup>

*Air-Ground Integration from the end of the Korean War until the Vietnam War*

While ill prepared for joint air ground operations at the outbreak of hostilities in Korea, by the end of hostilities, the United States Army and Air Force had relearned many lessons from World War II.<sup>56</sup> However, statements by senior leaders allowed the Air Force to ignore those lessons. When Secretary of the Air Force Finletter heard President Dwight D. Eisenhower declare that “never again would the United States

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<sup>54</sup> Wolf, 241.

<sup>55</sup> Pace Jr., Frank, Secretary of the Army, and Secretary of the Air Force Thomas K. Finletter. "Pace-Finletter Agreement, 4 November 1952" in *The United States Air Force: Basic Documents on Roles and Missions*, by Richard I. Wolf (Washington D.C.: United States Air Force, 1987), para. 2.

<sup>56</sup> Luke, 14.

become bogged down in a war like the one in Korea, where the full brunt of American power could not, or would not be applied,”<sup>57</sup> he remarked that “the Korean War was a special case, and airpower can learn little from there about its future role.”<sup>58</sup>

Following Finletter’s lead, the Air Force chose to ignore the lessons learned in Korean. It quickly reverted to its preferred mission of strategic bombing and successfully lobbied to cancel the joint boards charged with evaluating close air support lessons learned and updating service doctrine.<sup>59</sup> In 1954, the Air Force made the Joint Operations Center an all-Air Force organization to which the other Services could only provide liaison officers. On June 23, 1956, the Air Force deactivated the 6147<sup>th</sup> Tactical Control Group, eliminating the last airborne tactical control unit.<sup>60</sup> The Air Force’s lack of enthusiasm for close air support mission during the Korean War and the subsequent abandoning of it in the mid-1950’s was not lost on the Army. In his autobiography, former Army Chief of Staff, General Matthew Ridgeway, warned that if the Air Force did not provide the Army with the resources it needed for CAS, the Army “eventually will have to develop them ourselves.”<sup>61</sup>

Building upon the success the helicopter had providing logistical support during the Korean War, Army General James Gavin wrote an article entitled "Cavalry, and I

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<sup>57</sup> Sbrega, John J. "Southeast Asia," in *Case Studies in the Development of Close Air Support*, edited by Benjamin Franklin Cooling (Washington D.C.: United States Air Force, 1990), 411.

<sup>58</sup> Tilford, Earl H. *Setup: What the Air Force did in Vietnam and Why* (Maxwell AFB: Air University Press, 2002), 21.

<sup>59</sup> Millett, 398.

<sup>60</sup> *Ibid*, 399.

<sup>61</sup> Ridgeway, GEN Matthew B., USA (Ret.). *Soldier: The Memoirs of Matthew B. Ridgeway*, (New York: Harper Brothers, 1956), 315.

Don't Mean Horses" advocating the use of helicopters for the rapid movement of troops on battlefield. Supporters of Gavin's "sky cavalry" also recognized the need for armed escort to suppress enemy gunners as the "sky cavalry" moved forces. To many in the Army, it was clear the Air Force would not willingly perform this escort role, so they explored other means of air support.<sup>62</sup> The Army explored acquiring Cessna T-37 aircraft as observation and reconnaissance aircraft, while also developing and conducting tests using helicopters in the anti-tank role. The Army even went so far as seeking to acquire the G-91, an Italian close-support aircraft.<sup>63</sup> These actions ran directly counter to the Pace-Finletter Agreements in what one Army aviation observer called a "bureaucratic insurgency."<sup>64</sup> Air Force senior leaders learned of these events and justifiably complained to Secretary of Defense Charlie Wilson.

Secretary Wilson, in a November 1956 letter, harshly criticized the Army while also curtailing their growing aviation enterprise. His guidance also specifically prohibited Army aircraft from performing strategic and tactical airlift (except within the Army combat zone), tactical reconnaissance, interdiction of the battlefield, and close combat support. He further limited helicopters to a 20,000-pound weight limitation, and reinforced the 5,000-pound weight limit on fixed-wing aircraft.<sup>65</sup> Five months later,

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<sup>62</sup> Campbell, 77.

<sup>63</sup> Halperin, Morton H., and David Halperin. "Rewriting the Key West Accord" in *Reorganizing America's Defense: Leadership in War and Peace*, edited by Robert J. Art, Vincent Davis and Samuel P. Huntington (Washington DC: Pergamon Brassey's, 1985), 347.

<sup>64</sup> Campbell, 78.

<sup>65</sup> Wilson, Charlie E., Secretary of Defense. "Wilson Memorandum, 26 November 1956" in *The United States Air Force: Basic Documents on Roles and Missions*, by Richard I. Wolf (Washington D.C.: United States Air Force, 1987), para. 1, sect. d.



Secretary Wilson issued Department of Defense Directive (DODD) 5160.22, which cancelled the second Pace-Finletter Agreement and codified the roles and equipment limitations in his November 1956 memorandum.<sup>66</sup> This directive also contained a stern warning to the Air Force “to be prepared to devote an appreciable portion of its resources to such support” in order to meet the requirements specified by the Army.<sup>67</sup>

If the Services used the lessons learned in Korea to guide their development and training between Korea and Vietnam, US combat forces might have been better prepared for the conflict developing in Southeast Asia. Yet, both Services entered the 1960’s ill equipped to fight another limited war. Oddly enough, while CAS would continue to be a disruptive issue, it would also play a larger role in Vietnam than it had in World War II or Korea and forever alter the way the Services would view and utilize close air support.<sup>68</sup>

#### *Air-Ground Integration during the Vietnam War*

Three noteworthy events changed the course of close air support during the Vietnam War. The first major event was the restructuring of the tactical air control system and establishing a single manager of air resources. An Air Force study “found that the response time for close air-support requests prior to 1965 averaged ninety minutes and that only half of all requests were met.”<sup>69</sup> Other studies focusing on

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<sup>66</sup> Wolf, 317.

<sup>67</sup> Office of the Secretary of Defense. "Department of Defense Directive 5610.22; Clarifying Roles and Missions of the Departments of the Army and the Air Force Regarding Use of Aircraft" in *The United States Air Force: Basic Documents on Roles and Missions*, by Richard I. Wolf (Washington D.C.: United States Air Force, 1987), para. III, sect. A.

<sup>68</sup> Hasken, 39.

<sup>69</sup> Sbrega, 423.

excessive delays in support found many requests for support never made it to the air support operations centers,<sup>70</sup> possibly explaining why nearly half of all CAS requests went unfilled.

In 1964, shortly after taking over as Commander of the 2nd Air Division, Lieutenant General Joseph Moore instituted a process to eliminate delays in immediate air support requests.<sup>71</sup> Previously, each intermediate command level between battalion and corps had to approve each specific request. The new process allowed each intervening command five minutes to disapprove all immediate requests or satisfy them by another means. No intervention by intermediate commands signified approval, sending the request forward for tasking. The Air Force devised and implemented the 20/40 formula, meaning requests for immediate air support would have CAS aircraft on station within twenty minutes if the aircraft were already airborne (i.e. diverted from a lower priority mission) or within forty minutes if ground alert aircraft were scrambled. The system of tacit approval greatly shortened the immediate response time and became so effective that by 1968, ground commanders were incorporating the 20/40 formula in their planning.<sup>72</sup>

The second major event affecting the CAS psyche was the introduction of the armed helicopter to the battlefield. Many in the Army thought it was a travesty, the way the Air Force neglected the ground support mission following Korea, especially considering the Air Force agreed to perform close combat support after becoming an

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<sup>70</sup> *Ibid*, 421.

<sup>71</sup> Sbrega, 429.

<sup>72</sup> *Ibid*, 449.

independent service and reaffirmed their role in many subsequent agreements.

Expanding upon Gavin's "sky cavalry," the Army developed the airmobile division, which used helicopters to achieve rapid battlefield mobility and provide armed escort. Under provisions of the Army's 1962 program to reorganize the objective division, the Army authorized an air cavalry troop in each division. This marked the first time the army "possessed a self-contained air-mobile combined arms strike force," and on 3 July 1965, the 11<sup>th</sup> Air Assault Division was re-designated the 1<sup>st</sup> Cavalry Division (Airmobile) and scheduled to deploy Vietnam ninety days later.<sup>73</sup>

The first test of the airmobile concept and its ability to provide organic fires came shortly after the 1<sup>st</sup> Cavalry Division arrived in Vietnam. On 14 November 1965, elements of the 7<sup>th</sup> Cavalry were inserted into the Ia Drang Valley in the central highlands of Vietnam. The ensuing battle was the first major battle between the US Army and the People's Army of Vietnam (PAVN). The PAVN movement to the south and direct engagement of US forces began the shift of US forces from fighting a counter-insurgency campaign to one where the US would "search-and-destroy" the enemy using large maneuver formations. This shift in tactics would also result in an increase in CAS requests. LTG Hal Moore, Commander of the 1<sup>st</sup> Battalion, 7<sup>th</sup> Cavalry, reflected in his book, *We Were Soldiers Once...and Young*, about the history of the 7<sup>th</sup> Cavalry. Comparing his situation to the battalion's history at the battle of Little Big Horn, Moore wrote, "I was determined that history would not repeat itself in the valley of the Ia Drang. We were a tight, well-trained, and disciplined fighting force, and we had one thing

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<sup>73</sup> Johnson, Lawrence H. *Winged Sabers: The Air Cavalry in Vietnam* (Mechanicsburg: Stackpole Books, 2001), 5-6.

George Custer did not have: fire support.” He further went on saying he wanted to “pull the chain on everything he could lay his hands on,” including artillery, airstrikes, and aerial rocket artillery, in a true combined arms effort.<sup>74</sup>

While the three-day battle would demonstrate the lethality of combined arms to support the infantry, the emphasis on armed helicopters in Ia Drang was the final indication that the Air Force’s singular execution on close support to Army had ended. Between 1960 and 1965, the Army helicopter force doubled to more than 5,000 aircraft. The Army now began turning primarily to its own aircraft, the attack helicopter, first for close air support. A 1965 Air Force study found that Army units were relying more and more on the fire support provided by armed helicopters.<sup>75</sup> Looking to negate the growing importance armed helicopters had in providing CAS, the Air Force began developing an aircraft dedicated to providing close air support.

In what was the third change in the development of CAS during the Vietnam War, the Air Force modified transport aircraft to provide quick reaction CAS assets. With the mid-1965 introduction of the gunship, it became the first aircraft the Air Force designed specifically for the close air support role.<sup>76</sup> With their long loiter times and volume of

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<sup>74</sup> Moore, Lieutenant General Harold G. USA (Ret), and Joseph L. Galloway. *We Were Soldiers Once...and Young, Ia Drang: The Battle that Changed the War in Vietnam* (New York: Random House, 1992), 80.

<sup>75</sup> Sbrega, 417 and 455.

<sup>76</sup> Three airframe variants of the Gunship flew in Vietnam, the AC-47 Spooky, the AC-119 Shadow, and the AC-130 Specter. The Air Force also used other single mission platforms including the A-37 Dragonfly and the AT-28. Both were trainers modified to be counter-insurgency platforms, and the A-1 Skyraider, which the Air Force borrowed from the Navy.

fire the gunships were ideal for CAS in a permissive air environment and were kept on airborne alert providing a quicker response for immediate CAS requests.<sup>77</sup>

While initially poor, close air support capability during the Vietnam War greatly improved throughout the conflict. Vietnam saw the return of the tactical air command and control system that, ironically enough, closely mirrored the system used in the Korean War and then was subsequently dismantled. Vietnam witnessed the introduction of the airmobile concept with the helicopter providing battlefield mobility and armed combat support. The use of helicopters for battlefield mobility and gunship support had an indelible impact on Army-Air Force air-ground relations. Despite the growth and increased capability brought on by the advances made in CAS during the war, following the war “the realities of reduced budgets, new equipment designs, and changing doctrine” began to erode the trust and capability that developed during the Vietnam War.<sup>78</sup>

#### *Air-Ground Integration after Vietnam*

During the late 1960's and early 1970's, the Air Force began developing the A-X close air support aircraft. The A-X, which eventually became the A-10, was the first Air Force aircraft acquisition of a single purpose close air support aircraft. To most observers, including the House Armed Services Committee (HASC), the A-X program appeared to duplicate the mission filled by attack helicopters. In April 1976, responding to earlier HASC hearings, the two Services chiefs drafted a letter, declaring that Army attack helicopters were organic to ground maneuver units and that the attack helicopter

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<sup>77</sup> Sbrega, 444.

<sup>78</sup> Hasken, 41.

did “not perform close air support but is intended to complement Air Force close air support capabilities.”<sup>79</sup> Congress accepted this position, thus allowing the Services to continue to field fixed-wing and rotary-winged CAS aircraft independently.

Following the Vietnam War, Army-Air Force cooperation received a big boost from the service chiefs of staff. Army Chief of Staff Gen Creighton W. Abrams and Air Force Chief of Staff Gen George S. Brown had enjoyed a close working relationship when they served together in Vietnam as the commanders of Military Assistance Command Vietnam (MACV) and Seventh Air Force, respectively. Hoping to continue their shared common outlook in Vietnam, they sought to expand and institutionalize the working processes between the Services.<sup>80</sup> Brown and Abrams personally expressed these desires to General Robert J. Dixon during his visit to the service chiefs while he was enroute to take command of the US Air Force Tactical Air Command (TAC). Four days after Dixon assumed command of TAC, General Abrams wrote General William E. DePuy, commander of the US Army Training and Doctrine Command (TRADOC), urging him to establish a working relationship with the new TAC commander. In his letter, Abrams said,

I have long believed that since there exists in the Army and Air Force a unique complementary relationship to conduct warfare on the landmass, it is absolutely essential that a close relationship exist, at all levels, between the two Services. The Army's recent experience in Southeast Asia has further reinforced my belief in the essentiality of close working ties with the Air Force. . . The problem that George Brown and I both face, is how

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<sup>79</sup> Weyand, GEN Fred C., USA, and Gen David C. Jones, USAF. "Weyand-Jones Close Air Support Memorandum, 7 April 1976" in *The United States Air Force: Basic Documents on Roles and Missions*, by Richard I. Wolf (Washington D.C.: United States Air Force, 1987), 404.

<sup>80</sup> Futrell, Robert Frank. *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force, 1961-1984, vol. II* (Maxwell Air Force Base: Air University Press, 1989), 539.

to carry over this commonality of purpose which existed so clearly in Vietnam, as it has in other operational settings, into the entire fabric of relationships between the two Services.<sup>81</sup>

With the guidance and support of their service chiefs, Dixon and DePuy met several weeks later, beginning a dialogue that would develop into a full-fledged partnership between TRADOC and TAC. This relationship would further grow and mature under their leadership and help break the cycle of wartime cooperation and peacetime feuding between the Services.

After the Vietnam conflict, the US Military was emotionally scared. While the force was not completely comprised of draftees, compulsory service had left an indelible mark on the military psyche. It had high AWOL rates, low morale, and an unacceptable drug use rate. However, while the US was fighting in Vietnam, Cold War rivals were continuing to face off in Europe and elsewhere. Looking to counter the numerical advantage held by the Warsaw Pact, the Army developed and adopted the Active Defense doctrine. Active Defense failed to gain acceptance due to its focus on defensive attrition warfare and an over-reliance on tactical nuclear weapons. General Donn A. Starry, an influential Army theorist, did not fully believe in the Active Defense doctrine and set about changing it.<sup>82</sup>

While serving in Europe as the V Corps Commander, Gen Starry began to look for ways to attack the enemy in depth by extending the battlefield prior to the enemy

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<sup>81</sup> *Ibid*, 540.

<sup>82</sup> Starry, General Donn A., USA (Ret). "AirLand Battle." *Lecture to AY08-09 Joint Advanced Warfighting School*. Norfolk: Joint Forces Staff College, Jan 6, 2009. TRADOC Commander Gen. DePuy sent Gen Starry to Israel following the 1973 Arab-Israeli war to evaluate the conflict and determine if any changes to US armor doctrine were required and to make them if necessary. From this visit to Israel, Starry began to envision a way for the US and NATO to fight outnumbered and win in Europe.

being able to mass its forces.<sup>83</sup> Shortly after Starry took over command of the Training and Doctrine Command in 1977, TRADOC began developing a new operational concept based upon his extended battlefield theory. The doctrinal concept of extending the battlefield, now known as AirLand Battle, was accepted to by both Services and would ultimately replace Active Defense as the Army's primary ground combat doctrine.<sup>84</sup> By the early 1980's, the Army had migrated from Active Defense to AirLand Battle as its primary doctrine for fighting the Warsaw Pact in Europe. In AirLand Battle, ground commanders sought to influence the battlefield beyond the forward edge of the battle area by destroying, disrupting, or delaying enemy follow-on formations before they reached the main (close) battle area. Air-ground integration was crucial to the successes of ground forces, which were relying on air assets to attack the follow-on forces and provide close air support to help defeat those forces engaging US and NATO ground forces.<sup>85</sup> AirLand Battle doctrine carried the Army through the end of the Cold War and to victory in the 1991 Persian Gulf War.

Viable doctrine is the cornerstone of good training, but absent a venue to exercise the doctrine it is nothing but "book learning." To ensure the Army could practice and refine its new doctrine, the Department of the Army opened the US Army National Training Center (NTC) at Ft. Irwin California, in October 1980. The mission of the NTC was to conduct large-scale training exercises for armor and mechanized forces based

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<sup>83</sup> Starry, Donn A. "Extending the Battlefield," *Military Review* (January 1997), 153.

<sup>84</sup> Slife, James C. *Creech Blue: Gen Bill Creech and the Reformation of the Tactical Air Forces, 1978-1984* (Maxwell Air Force Base: Air University Press, 2004), 33.

<sup>85</sup> Starry, "Extending the Battlefield," 155.



upon the AirLand Battle concept.<sup>86</sup> Shortly after the activation of the National Training Center, the Army asked the Air Force to assist in providing airbase support and close air support sorties for integration into the NTC exercise program. The timing could not have been better for a formalized air-ground training program. The previous eight years had seen the development of a strong Army-Air Force relationship, the direct result of the personal relationships forged between senior service leaders. In October 1981, TAC agreed to support the NTC exercises with airbase support and 900 fighter/attack sorties a year for FY 1982 and FY 1983. The Air Force committed the 35<sup>th</sup> and 37<sup>th</sup> Tactical Fighter Wings at George Air Force Base, California, to provide aircraft and/or support to other TAC units deploying to George AFB to participate in the NTC exercise.<sup>87</sup>

Over the next two years, TAC continued to formalize its relationship with the NTC and its involvement in NTC operations. In 1982, TAC released TAC Programming Plan 82-12, defining its operations at NTC and naming it Cornet Zap. TAC's mission at the NTC was to provide close air support training missions for Army units at the NTC, conduct tactical training for aircrews in CAS missions, establish a tactical air control party field training capability, and provide feedback to participating Air Force units. In April 1983, TAC finalized its exercise plan when it released EXPLAN 383 and changed the name of its training exercise from Cornet Zap to Air Warrior.<sup>88</sup>

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<sup>86</sup> Headquarters Tactical Air Command and Headquarters Training and Doctrine Command, *Memorandum of Understanding for Planning Joint Training at the Army National Training Center* (Langley AFB & Ft. Monroe: TAC-TRADOC, December 1, 1981), para. 3.a.

<sup>87</sup> Burge, Kevin I, Air Force Historical Research Agency Archivist, interview by Author. *History of the Air Warrior/Green Flag Exercise Program* (February 18, 2009), NP.

<sup>88</sup> Commander Tactical Air Command. "COMTAC EXPLAN 383," *Commander Tactical Air Command Exercise Plan 383*, (Langley Air Force Base: Headquarters Tactical Air Command, August 1, 1983), 1.

The Air Force continued its involvement with the Air Warrior program throughout the 1980's and significantly expanded its participation. By 1987, the number of sorties flown annually had increased to over 2,700 and the number of exercises had increased to as many as fourteen per year. Tactical aircraft units also flew "red-air" close air support sorties in support of the NTC's opposing ground maneuver force (OPFOR). In 1989, as George AFB was preparing for closure under the 1988 BRAC program, the Air Force transferred Air Warrior operations to the 57<sup>th</sup> Wing, at Nellis AFB, Nevada.<sup>89</sup>

Recognizing doctrine and training were not enough to ensure the success of AirLand Battle, on May 22, 1984, the Services, signed a memorandum of agreement seeking to provide "forces capable of executing the airland battle."<sup>90</sup> This agreement, better known as the 31 Initiatives, contained several initiatives dealing with close air support. Initiatives #10 and #24 reaffirmed the Air Force mission of close air support, including the development of rear-area CAS doctrine and tactics. Initiative #25 focused on forward air control and tactical air control party operations. The agreement also had a built-in check system. Initiative #31 required the Services to exchange a formal priorities list for the inclusion in the program objective memorandum (POM) development process. This agreement began a period of unprecedented interservice cooperation.<sup>91</sup>

In 1987, the Army, realizing light infantry forces needed the same high fidelity training that heavy forces enjoyed at the National Training Center, created the Joint

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<sup>89</sup> Burge 2009.

<sup>90</sup> Wolf, 413.

<sup>91</sup> Wickham, GEN John A., USA, and Gen Charles A. Gabriel USAF. "Memorandum of Agreement on U.S. Army - U.S. Air Force Joint Force Development Process, 22 May 1984" in *The United States Air Force: Basic Documents on Roles and Missions*, by Richard I. Wolf (Washington D.C.: United States Air Force, 1987), para 1.

Readiness Training Center (JRTC) at Fort Chaffee, Arkansas. Tactical Air Command, hoping to provide low and mid intensity training to its personnel, expanded its Air Warrior program and established Air Warrior II at Little Rock AFB, Arkansas. In 1992, when Tactical Air Command became Air Combat Command, the Air Warrior program changed headquarters. In 1994, when the JRTC moved to Fort Polk, Louisiana, the Air Force continued its support and relocated Air Warrior II to Barksdale AFB, Louisiana.

After the fall of the Iron Curtain and end the Cold War, many felt the odds of the United States or its Allies engaging in military operations akin to AirLand Battle were extremely low. While never tested against the Warsaw Pact, the US was able to see the potential of AirLand Battle doctrine in the deserts of the Middle East. The success of the 1990-91 Persian Gulf War clearly illustrated the lethality brought about by the right combination of doctrine, training, equipment, and both Services focusing on joint air-ground integration.

The success of close air support operations in Iraq and Afghanistan have increased its visibility within both the Army and Air Force. The images of Army and Air Force special operations forces riding on horseback and providing close air support to the Northern Alliance while fighting the Taliban in remote regions of Afghanistan are forever etched in the military mind. However, for all of the successes of close air supports, one operation - Anaconda - stands out for bringing CAS back to the forefront of Army-Air relations.<sup>92</sup>

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<sup>92</sup> Grant, Rebecca. "The Clash About CAS," *AIR FORCE Magazine*, January 2003, 56.

Operation Anaconda was the March 2002 operation concentrating on Taliban and al Qaeda fighters in Afghanistan's Shah-e-Kot Valley. Air supremacy and the lack of any significant strategic targets resulted in the ground forces operating in Afghanistan having all available airpower for close air support. The commander of the ground forces, Major General Franklin Hagenbeck, made the decision to leave his artillery pieces behind, believing mortars and air support would provide enough fire support.<sup>93</sup> Even though the commander had decided CAS would be important to his operations in Afghanistan, Army planners failed to coordinate CAS in advance of the operation.<sup>94</sup> Subsequent to the operation, in an interview by Robert H. McElroy for *Field Artillery* magazine, MGEN Hagenbeck made several pointed charges about the slow delivery time of weapons and the procedures for requesting CAS.<sup>95</sup>

Operation Anaconda had an impact well beyond its impact on combat operations in Afghanistan. Following MGEN Hagenbeck's comments and concerned about sacrificing the progress made in CAS integration between the Services, high-level Army and Air Force leaders held talks reaffirming their Services commitments to CAS, during the October 2002, Army-Air Force warfighter talks.<sup>96</sup>

Lessons learned from Operation Anaconda would affect air-ground integration during Operation Iraqi Freedom, which began a year later. General T. Michael Moseley, who was the Combined Forces Air Component Commander (CFACC) for Operation

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<sup>93</sup> McElroy, Robert H. "Fire Support in Operation Anaconda," *Field Artillery Magazine*, September-October 2002, 9.

<sup>94</sup> Grant, 57.

<sup>95</sup> McElroy, 8.

<sup>96</sup> *Ibid*, 55.

Anaconda, also served as the CFACC for Operation IRAQI FREEDOM. Looking not to repeat the coordination issues from Operation Anaconda, General Moseley established an Air Component Coordinating Element (ACCE) at the other components headquarters. Additionally, prior to Operation IRAQI FREEDOM, the CAOC added a CAS cell dedicated to the liaison between the air and land components.<sup>97</sup> These changes made significant improvements to close air support operations during Phase I of Operation IRAQI FREEDOM. Close air support was such an integral part of the US Army's rapid advance to Baghdad, that V Corps Historian Dr. Charles E. Kirkpatrick, described the effort as an "almost flawless operation of a thoroughly integrated combined-arms team."<sup>98</sup> As major combat operations ended in Iraq, the U.S. and its coalition partners began focusing on stability and reconstruction operations.

The threat US military forces currently face in Afghanistan and Iraq has changed from organized conventional forces to insurgents and terrorists. Recognizing that the current operating environment has changed, the Services have altered their pre-deployment training. The Army's ground combat training centers now focus on stability and reconstruction operations including, but not limited to, cordon and search, countering improvised explosive devices, and convoy operations. The structure of Air Warrior I and Air Warrior II exercise programs have also changed. In October 2006, the Air Force elevated the Air Warrior program to a "flag" exercise becoming one of Air Combat

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<sup>97</sup> United States Air Force. *Operation Anaconda: An Airpower Perspective* (Washington D.C.: Office of Air Force Lessons Learned, 2005) 121.

<sup>98</sup> Kirkpatrick, Charles Edward. *Joint Fires as They Were Meant to Be: V Corps and the 4th Air Support Operations Group during Operation Iraqi Freedom* (Arlington, VA: Institute of Land Warfare, Association of the United States Army, 2004), 1.

Command's top-tier exercise programs, with the renaming of Air Warrior I as Green Flag-West and Air Warrior II became Green Flag-East.<sup>99</sup> The combination of the Army's CTC rotations and the Air Force's Green Flag exercises continue to be the only venue in the United States where Army Brigade Combat Teams and Air Force Squadrons can train together in a realistic training environment. The Services only need to look at their collective pasts to see the importance of joint close air support training.

More than studying the past, history is the element linking yesterday to today and helping define our view of tomorrow. Devoted to strategic bombing, the Air Force neglected other missions, particularly close air support, which tended to tie air assets to ground commanders' needs. The single-minded focus towards strategic bombing exacerbated interservice rivalries through the beginning of the Vietnam War. While the Air Force did not fully accept the close air support mission, neither did it want the Army to adopt that mission and thereby avail itself of the opportunity to procure combat airplanes.<sup>100</sup> Following Vietnam, the Army and Air Force began a successful air-ground partnership that manifested itself in both combat and training. A look at the past shows the Air-Air Force CAS relationship becomes stronger when conducting joint operations together.

The collective training opportunities provided by the CTC and Green Flag programs is demonstrated by the number and variety of units receiving training. During the 2009 Fiscal Year, the Army and Air Force conducted 17 joint training exercises, 9 at the NTC and 8 at the JRTC. The combined exercises supported the training of 15 BTC's,

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<sup>99</sup> Burge, NP.

<sup>100</sup> Tilford, 284.

elements of two Marine Expeditionary Units, 3 Ranger battalions, 32 ground attack squadrons, and 3 intelligence, surveillance, and reconnaissance squadrons (ISR). Participating units represented all branches of the Department of Defense and the militaries of four European Allies.<sup>101</sup> However, the training conducted across these venues continues to be service-centric and with little joint air-ground integration training. Army-Air Force training and integration is diverging, thereby increasing the potential for another friendly fire incident.

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<sup>101</sup> Delong, Yale J., interview by author. *Air Combat Command Green Flag Program* (January 28, 2009).

## Chapter 2

### Barriers to Joint CAS Training

*Differences in equipment, in doctrine, in attitude and outlook stemming from contrasting past experience all inhibit and complicate harmonious interaction. Past successes, however, have shown that these difficulties can be overcome where determination is present and effective procedures have been devised and applied by properly trained troops. Experience also shows that armed forces, not only of the United States but the other nations, have been slow to hammer out the necessary procedures. Often corrective steps have been achieved only after many failures in battle. In no other area of interservice operations has this phenomenon been more pronounced than in the matter of close air support.<sup>102</sup>*

- I.B. Holley, Jr.

Whether executing major combat operations or fighting a counter-insurgency, history has shown the Army will continue to place a constant demand on the Air Force to provide close air support.<sup>103</sup> The question then becomes, how do the Services better integrate so close air support can achieve the desired result while also reaching for the goal of zero fratricide? Joint training is the key, but has more than six decades of Army and Air Force interservice squabbling made integration and interdependence an unattainable idea? While history may provide the foundation to Army and Air Force discord, current service cultures based upon their respective roles, missions and doctrine

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<sup>102</sup> Holley, Jr., I.B. "A Retrospect on Close Air Support," in *Case Studies in the Development of Close Air Support*, edited by Benjamin Franklin Cooling (Washington D.C.: United States Air Force, 1990), 535.

<sup>103</sup> During the Korean War, approximately eight percent of the sorties flown were in direct support of ground forces (see Millett pg 396). During ground portion of 1991 Gulf War approximately thirty-five percent of the sorties flown were in direct support of ground operations (see Coyne pg 179); and over the previous year ending February 3 2009, thirty-two percent of the sorties flown in Iraq were CAS Sorties (data provided by Air Force Association).



also help build barriers to joint close air support training. In addition to cultural barriers, service force structure, ongoing operational commitments, and the training construct at the Combat Training Centers are all having negative effects on CAS training. With history as a backdrop, this section will show how service cultures, current force structures, and Services training programs are all active barriers to joint close air support training.

### **Service Cultures: Roles, Missions, and Doctrine**

Anthropologists use the term culture when explaining the “customs and rituals that societies develop over the course of their history.”<sup>104</sup> Cultural biases and service perspectives are instrumental in the shaping of service doctrine and service views on the role of close air support. Those same biases have caused immense trust problems between the Army and Air Force regarding close air support. Trust between the Services is a central issue that directly affects how the Services view close air support. The issue between the Services is whether the Army trusts the Air Force to support them when needed and conversely does the Air Force trust the Army to use CAS as intended. Trust is a subjective quality that is extremely difficult to measure and can change quickly depending upon the context of the situation. The enduring CAS bond between the Army and the Air Force is full of examples where actions by one service or the other has negatively affected the bond of trust between the two. The relationship has not always

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<sup>104</sup> Schein, Edgar H. *Organizational Culture and Leadership, Second Edition* (San Francisco: Jossey-Bass, 1992), 3.

been adversarial, there are also numerous examples where the Services have overcome these setbacks and ended up working together successfully in combat.

Recognizing and understanding that each service has their own unique culture will go a long way in helping to develop training that is inherently joint and build trust between the two organizations. The way a service views itself, its mission, and how it executes its mission, shape service identity. This “who, what, how” paradigm could also be labeled the “culture, roles, doctrine” model. While scholars may debate whether doctrine shapes service culture or service culture shapes doctrine, the key aim is to recognize the two interact with each other and attempt to understand how these factors influence the service’s view of close air support. The Services must also be willing to admit that anything less than full integration in training will not enhance CAS operations and may ultimately put US ground forces lives in jeopardy.

### *The United States Air Force Culture*

#### US Air Force Roles and Missions

Within the Services, including the Air Force, there are perceptions that counterland operations, especially close air support, are a low priority mission.<sup>105</sup> To understand why the Air Force views counterland missions as a lower priority mission one must examine the broader context of the Air Force’s roles and missions. Department of Defense Directive 5100.1, *Functions of the Department of Defense and Its Major Components*, states the primary mission of the Air Force is to:

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<sup>105</sup> Lawing, Major Brett B. USMC. "America's Armed Forces Service Culture Impact Close Air Support," *Air & Space Power Journal* (December 18, 2006), 1.

*“organize, train, equip, and provide forces for the conduct of prompt and sustained offensive and defensive combat operations in the air and space--specifically, forces to defend the United States against air and space attack in accordance with doctrines established by the JCS, gain and maintain general air and space supremacy, defeat enemy air and space forces, conduct space operations, control vital air areas, and establish local air and space superiority, except as otherwise assigned herein.”<sup>106</sup>*

DODD 5100.1 continues to list functions the Air Force must perform and in the fourth paragraph following the section quoted above it finally directs the Air Force “to organize, train, equip, and provide forces for close air support and air logistic support to the Army.”<sup>107</sup> Succinctly put, the Air Force rightfully views its primary mission to gain and maintain supremacy in air domain. The Air Force views the guidance provided by the Department of Defense and sees air superiority as both their primary mission and goal. Exemplified by comments of the Commander of Tactical Air Command, General John Loh, who said in 1992, “Air superiority is not a mission we can win 101-98 in overtime. We must triumph in the air convincingly and quickly to be able to do the other theater missions.”<sup>108</sup> Without air superiority, the Air Force argues it cannot perform CAS properly or effectively.

Airpower advocates frequently point out that no conventional army has been able to conquer and secure victory in the face of an enemy with air superiority. There is a certain expectation by US Forces, both in its psyche and doctrine, that the US will always have some degree of air superiority, if not air supremacy. Current joint doctrine reinforces the

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<sup>106</sup> Office of the Secretary of Defense. *Department of Defense Directive 5100.1, Functions of the Department of Defense and Its Major Components* (Washington D.C.: Department of Defense, 2003), 21. Hereafter referred to as DODD 5100.1.

<sup>107</sup> DODD 5100.1, 22.

<sup>108</sup> Loh, General John, USAF (Ret). "Advocating Mission Needs in Tomorrow's World," *Airpower Journal* (United States Air Force, Air University, 6, no. 1, Spring 1992), 12.

primacy of the air superiority mission. Joint Publication 3.0 *Joint Operations* states, that the “JFC [Joint Force Commander] normally seeks to gain and maintain air superiority as quickly as possible to allow friendly forces to operate without prohibitive interference from adversary air threats.”<sup>109</sup> Gaining and maintaining air superiority has become a non-negotiable axiom in the joint fight and the Air Force is primarily responsible for that task. Upon examination of the Air Forces roles and missions, it is easy to see why the Army believes the Air Force does not hold the direct support to ground forces in high regard. Air Force Doctrine further reinforces this view.

### US Air Force Doctrine and Perspectives on CAS

Airpower seeks to influence the conduct of war by attacking an adversary’s political, military, and economic base for waging war. Air Force doctrine maintains airpower is most effective when focusing its efforts at the operational level of war.<sup>110</sup> The Air Force supports the joint force commander by conducting counterland operations against enemy land forces. Counterland operations support ground forces in two methods. The first is indirect support through interdiction (AI), where the effects do not have an immediate effect on the close tactical ground fight. The next mission is the direct support of the ground forces via close air support, where airpower provides immediate assistance to ground forces.<sup>111</sup> The Air Force views attacks against deployed enemy forces as a less effective use of air power, although under the right circumstances

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<sup>109</sup> *JP 3-0*, III-20.

<sup>110</sup> United States Air Force Doctrine Center. *Air Force Basic Doctrine, AFDD 1* (Maxwell Air Force Base: Headquarters United States Air Force, 1999), 39. Hereafter referred to as AFDD 1.

<sup>111</sup> *AFDD 1*, 43.

it recognizes interdiction as being quite lethal. The following passage from the Air Force's counterland doctrine further illustrates the decreasing emphasis on close air support.

*All of these benefits of CAS must be weighed against the other, potentially more effective, uses for CAS-capable assets such as AI or even strategic attack. The ground commander should use his organic firepower whenever possible before calling in requests for CAS*<sup>112</sup>

While Air Force doctrine does recognize CAS can provide a tremendous tactical advantage, it maintains that those successes rarely achieve campaign-level objectives.<sup>113</sup> The Air Force sees CAS an ancillary mission with many risks, but little impact on the outcome of the conflict. The last line in the passage above clearly reinforces the Air Force view that close air support is a mission performed only under extreme conditions. Finally, Air Force fears about becoming flying artillery, divided and assigned to support lower-echelon ground forces, still exists today as it did during World War II.<sup>114</sup> The irony and reality of the current situation is that the threat presented by trans-national terror organizations and non-peer military competitors means the probability of the United States engaging in a major strategic bombing campaign, in the near future, is highly unlikely. If for no better reason than remaining relevant in the current fight, the Air Force must embrace the counterland mission, especially close air support.

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<sup>112</sup> United States Air Force Doctrine Center. *Counterland: AFDD 2-1-3* (Maxwell Air Force Base: Headquarters United States Air Force, 1999), 35.

<sup>113</sup> *AFDD 1*, 47.

<sup>114</sup> Hasken, 7.

## *The United States Army Culture*

### Army Roles and Missions

When examining the Services primary roles and missions in DODD 5100.1, one instantly notices a significant difference in how the directive spells out the Services primary roles and missions. The first paragraphs in each service's function section are similar in intent. Each service is to gain and maintain supremacy in a specific domain. Yet, they differ in how that task is articulated. It takes one-hundred and twelve words to convey the Navy's primary function, seventy-eight for the Air Force, and just thirty-three for the Army. The primary role of the Army is "To organize, train, and equip forces for the conduct of prompt and sustained combat operations on land -- specifically, forces to defeat enemy land forces and to seize, occupy, and defend land areas."<sup>115</sup> While similar to the Air Force and Navy in seeking to defeat the enemy, the Army is fundamentally different because it charged with seizing and occupying a domain versus just controlling it. This leads to two unique characteristics in the Army persona.

The first characteristic is where the Army focuses its efforts. The teachings of Prussian military theorist Carl von Clausewitz dominate contemporary western military thinking. In fact, Clausewitz had such an impact on Army thinking, that he is the only historic military theorist quoted in the new Army Field Manual 3-0, *Operations*.<sup>116</sup> In his work *On War*, Clausewitz espouses, "Fighting is the central military act...the objective of

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<sup>115</sup> DODD 5100.1, 15.

<sup>116</sup> United States Army Training and Doctrine Command. *FM 3-0, Operations* (Ft. Monroe: Headquarters Department of the Army, 2008), 1-15, 1-17, 6-1, 6-8, and 6-15. Note: Additionally, Clausewitz and his concepts of "Chaos, chance, and friction," are mentioned in the introduction.

fighting is the destruction or defeat of the enemy.”<sup>117</sup> Succinctly put, like its function statement earlier, the Army focuses directly on the enemy army.

The second characteristic that directly shapes the Army’s vision towards close air support is the importance to having “boots on the ground.” The Army believes to win our nation’s wars; it must close with and destroy the enemy. The Army’s capstone field manual, FM-1, opens with the following quote from T.R. Fehrenbach’s book on the Korean War, *This Kind of War*:

*...[Y]ou may fly over a land forever; you may bomb it, atomize it, pulverize it and wipe it clean of life—but if you desire to defend it, protect it, and keep it for civilization, you must do this on the ground, the way the Roman legions did, by putting your young men into the mud.*<sup>118</sup>

The Army further promotes the supremacy of their efforts by saying, “the Army’s fundamental ability to control land, resources, and people through a sustained presence makes permanent the advantages gained by joint forces.”<sup>119</sup> Re-stated, the other Services contributions only become permanent because of the Army. This may explain the soldier’s “opinion that air and naval forces exist primarily to transport the soldier to the scene of action and support him after he gets there.”<sup>120</sup> While written over 40 years ago, that passage defines a service cultural perspective that is still evident in today’s Army. This service persona, while still a barrier, is no greater a barrier to effective close air

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<sup>117</sup> Clausewitz, Carl von. *On War*, edited by Michael Howard and Peter Paret, translated by Michael Howard and Peter Paret (New York: Everyman's Library, 1993), 268.

<sup>118</sup> United States Army Training and Doctrine Command, *FM-1, The Army* (Ft. Monroe: Headquarters Department of the Army, 2005), 1-1. Hereafter referred to as FM-1

<sup>119</sup> FM-1, 1-1.

<sup>120</sup> Wylie, J.C. *Military Strategy: A General Theory of Power Control* (New Brunswick: Rutgers University Press, 1967), 54.

support than the Air Force's emphasis on strategic attack and air-to-air combat. Unfortunately, it spills over into the Army's perspective on close air support, thereby affecting joint air-ground training.

### US Army Doctrine and Perspectives on Close Air

Following the training successes of AirLand Battle and the rapid US victory in the 1991 Persian Gulf War, the 1993 version of FM 100-5<sup>121</sup>, included the following section on CAS:

*Close air support (CAS) missions support land operations by attacking hostile targets close to friendly ground forces. CAS can support offensive operations with preplanned or immediate attacks. All preplanned and immediate CAS missions require timely intelligence information. CAS missions require positive identification of friendly forces and positive control of aircraft. CAS can enhance ground force operations by delivering a wide range of weapons and massed firepower at decisive points. It can surprise the enemy and create opportunities for the maneuver or advance of friendly forces through shock action and concentrated attacks. CAS can also protect the flanks of friendly forces, blunt enemy offensives, enhance economy-of-force operations, and protect the rear of land forces during retrograde operations.*<sup>122</sup>

It appears the 1993 field manual was the high water mark of the Army's dialogue of CAS when compared to either one of Army's two current capstone doctrine manuals, FM 1 (2008) and FM 3-0 (2001). A review of CAS in the most current FM 3-0 finds it only mentioned when it says, "Joint capabilities, such as close air support and special operations forces, can complement or reinforce Army forces' capabilities."<sup>123</sup> The

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<sup>121</sup> Note: The 14 June 2001, FM 3-0 superseded and replaced the June 1993, FM 100-5.

<sup>122</sup> United States Army Training and Doctrine Command. *FM 100-5, Operations* (Ft. Monroe: Headquarters United States Army, 1993), 2-19.

<sup>123</sup> FM 3-0, 4-7.



Army's de-emphasizing close air support coincided with the decline in the use of CAS in major US operations. Operation Deliberate Force, the 1995 NATO led air campaign in Bosnia, did not include close air support and Operation Allied Force, the 1999 NATO led air campaign against Serbia again had no CAS missions flow.<sup>124</sup> Neither of these conflicts saw direct involvement of ground forces resulting in no opportunity to fly close air support sorties. The Air Force also has some culpability in the decline in the use of CAS. In 1994, shortly after the release of the 1993 FM 100-5 Air Force Chief of Staff General Merrill McPeak advocated eliminating CAS as a priority of the Air Force.<sup>125</sup> While General Ronald R. Fogleman, the next Air Force Chief of Staff, reversed the official Air Force position,<sup>126</sup> Gen. McPeak's comments help perpetuate the notion that the Air Force does not like CAS. Although the actions by Air Force senior leaders contribute to the diminishing presence of CAS in Army doctrine, they are not the sole factors.

The Army has a mixed record of accomplishment using close air support, primarily because it has grown accustomed to using its own organic fire-support assets of artillery and attack aviation. Soldiers inevitably and understandably prefer organic fires, starting with the smallest caliber weapon at their disposal, and then escalating to mortars, artillery, Army attack aviation, before finally choosing close air support.<sup>127</sup> While soldiers plan to have CAS available, they do not plan to use it because that would mean

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<sup>124</sup> Grant, 56.

<sup>125</sup> McPeak, Merrill A. "Presentation to the Commission on Roles and Missions of the Armed Forces," Washington DC, September 14, 1994. 103.

<sup>126</sup> Luke, 51.

<sup>127</sup> Grant, 58.

they had to reach outside of their organization for support. Rebecca Grant, president of the national security research firm, *Iris*, writing in a 2003 *AIR FORCE Magazine* article asserted, “The Army views CAS as an emergency procedure using it when nothing else will work.”<sup>128</sup> While the delivery may be heavy-handed, the message is correct. That message is the Army does not plan to use, nor actually use, CAS until it is determined their own organic assets are unable to accomplish an assigned task. The increasing reliance on artillery and rotary winged aviation helps perpetuate the Army-Air Force CAS paradox. In this paradox, the Army asserts the Air Force is not dedicating enough resources towards CAS so they develop their own capability. The Air Force responds that the Army is not using the resources provided, so why should the Air Force dedicate any more resources. Given the Army and Air Force unique histories, missions, and operating domains, it is easy to see how cultural differences between the Services could develop.

### **Force Structure**

On 12 October 1999, the Army unveiled “Army Vision,” the Army’s plan to transform the Army to meet the needs of the nation, today and in the future. The transformation plan has evolved into the Objective Force construct. One key element in the transformation plan was converting from a structure in which the division is the main unit of action, to a system where the brigade combat team (BCT) becomes the main unit of action. Once fully implemented, Army BCTs will be able to execute across the full

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<sup>128</sup> *Ibid*, 58.

spectrum of operations.<sup>129</sup> Army transformation will follow two distinct, but complementary paths, both having a direct effect on the Air Force's ability to support the Army and by extension the ability of both Services to provide and use CAS as effectively and efficiently as possible.

Type of Army Unit (brigades and brigade equivalents)	Number	TAC Elements Each	Total TAC Elements
Armored, mechanized infantry, cavalry brigade	18	6	108
Light infantry, mountain, airborne, air-assault brigade	15	9	135
Ranger regiment	1	9	9
Special Forces group	5	8	40
Total	39		292
Note: Number = number of such units in current Army structure; TAC elements Each = TACS aligned with each unit, counted as two-man teams.			

Table 1: Requirements for TAC Elements in Pre-Transformational Army Structure (Pirnie, et al. 2005, 144)

The first path is the increase in the number of combat maneuver brigades in the active component from 39 to 48.<sup>130</sup> These 48 BCTs combined with the 28 in the reserve/guard component will give the Army 76 BCTs.<sup>131</sup> The second transformational path is the organization of the BCTs into one of three types of combat formations. The new modular brigade combat teams will come in one of three types, an infantry BCT (IBCT), a heavy BCT (HBCT), or a Stryker BCT (SBCT). Modular brigade combat teams will be lighter than their predecessors were, resulting in increasing mobility on the

<sup>129</sup> United States Army. "U. S. Army White Paper: Concepts for the Objective Force." United States Army. November 30, 1999. <http://www.army.mil/features/WhitePaper/default.htm> (accessed January 18, 2009), iv.

<sup>130</sup> Note: This number includes 33 combat maneuver brigades and 6 brigade equivalents (5 Special Forces Groups and the Ranger Regiment). See Figure 1 for a breakdown by brigade type.

<sup>131</sup> STRATFOR. United States: Troop Availability and the 'Window of Opportunity'. August 18, 2008. [http://www.stratfor.com/analysis/united\\_states\\_troop\\_availability\\_and\\_window\\_opportunity](http://www.stratfor.com/analysis/united_states_troop_availability_and_window_opportunity) (accessed February 21, 2009).

battlefield and making them quicker and easier to deploy. One of the ways the Army is making its forces lighter is by reducing their indirect artillery fire support.<sup>132</sup> The loss of organic fire-support means ground combat units will rely more upon non-organic assets. The increase in the number of Army ground combat units while also decreasing their organic fire support will result in an increased demand for airpower to provide in-direct fire support. Both the increase in the number of BCTs and in the reorganization of the Army's combat forces drove the requirement for JTACs from 292 to 397 created an instantaneous shortfall. While the Air Force is working to correct the shortfall it will be sometime after 2011 before it can meet 100% of the new JTAC manning requirements.<sup>133</sup>

Type of Army Unit (brigades and brigade equivalents)	Number	TAC Teams Each	Total TAC Teams
Infantry and Heavy Brigade Combat Teams	36	8	288
Stryker Brigade Combat Teams	6	10	60
Ranger regiment	1	9	9
Special Forces group	5	8	40
<b>Total</b>	<b>48</b>		<b>397</b>
<b>Note:</b> Number = number of such units in current Army structure; TAC Team Each = TACS aligned with each unit, counted as two-man teams.			

**Table 2: 2009 Active Duty Requirements for TAC Elements (Source: Air Combat Command A3Y)**

**Note:** ACC is the POC for the active duty infantry, heavy, and stryker requirements only.

When ground commanders decide they need close air support, they turn to their Air Force Tactical Air Control Party. The tactical air control party is the conduit between the ground forces and the air forces. While the TACP varies in size depending upon the Army echelon being supported, they are most commonly recognized as a two-person team, living and working with a specific Army ground unit. These specially trained

<sup>132</sup> Pirnie, Bruce R., Alan Vick, Adam Grissiom, Karl P. Mueller, and David T. Orletsky, *Beyond Close Air Support: Forging a New Air-Ground Perspective* (Santa Monica: RAND Corporation, 2005), 109.

<sup>133</sup> Chief Master Sergeant Steven L Lucas, TACP Functional Manager, Headquarters Air Combat Command, interview by author. *JTAC Manning* (March 19, 2009).

individuals advise the ground commander on the integration of airpower into their scheme of maneuver. Once a commander decides to use CAS, the TACP then assists them in getting the needed assets and controls the airstrikes. Integral to the TACP and the critical link in the CAS kill chain, is the joint terminal attack controller better known as the JTAC.

The JTAC mission is very demanding and extremely complex. JTACs must be able to visualize a three dimensional battlespace, deconflict CAS aircraft with both direct and in-direct fire, and integrate CAS to achieving the ground commander's goals. This necessitates an understanding of both ground and air combat tactics. These individuals must understand the ground commander's intent and be able to determine when and where to best utilize CAS. Moreover, having weapons release authority makes the JTAC ultimately responsible for ensuring airpower achieves the desired effects and avoids fratricide. The unique capabilities and the lethal fires JTACs control makes these TACP teams a high demand asset.

Prior to Army transformation and Operations Iraqi and Enduring Freedom, the Air Force was able to provide 292 two-person terminal attack control (TAC) teams for the Army's 39 combat brigades.<sup>134</sup> These TAC teams habitually trained with the brigade and battalion staffs they supported. The effectiveness of close air support during initial combat operations in Iraq is testimony to the viability of that habitual relationship. OEF and OIF demonstrated how rapidly JCAS has evolved. Once regarded as a specialty

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<sup>134</sup> Note: Heavy (armor and mechanized infantry) units received fewer TACs elements than light (airborne and light infantry) units did. Each maneuver battalion headquarters had a TAC element as well as two-thirds of the light maneuver companies and about one-third of the heavy maneuver companies.

mission conducted by a limited number of people and aircraft, CAS is now such a critical capability requiring more and varying systems to execute.<sup>135</sup>

In early 2005, the demands of fighting in Afghanistan and Iraq began affecting the Army's ability to generate the forces needed by the warfighting commander. Looking for a better process to manage the availability of its forces, Army planners developed the Army Force Generation (ARFORGEN) concept. Colonel James Dickens, the Chief of the ARFORGEN Requirements Integration Branch, described the ARFORGEN process as a cyclic training and readiness process that provides ready forces to meet joint mission requirements.<sup>136</sup> Under the ARFORGEN construct, the Army distributes its brigade combat teams across three force pools. The first pool is the "reset/train" pool, which includes units that recently returned from a deployment, are experiencing significant personnel and/or equipment changes, or are unable to sustain "ready" or "available" force capability levels. Units in this pool conduct individual and unit mission essential task list (METL) training focusing on basic core tasks. The second force pool is the "ready" pool and includes units assessed as being "ready" to conduct mission preparation. The third force pool is the "available" pool and includes units assessed as being "available" to conduct missions to support warfighting commanders.<sup>137</sup>

According Colonel Dickens, the number of BCTs needed to meet current requirements exceeds the number of BCT's in the "available" pool. To meet combat

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<sup>135</sup> Bohn, Lt Col Richard, USAF. "Joint Close Air Support Transformed," *Air & Space Power Journal* (Spring 2007), 57.

<sup>136</sup> Colonel James Dickens, interview by author. *Army Force Generation* (March 30, 2009).

<sup>137</sup> United States Army. *Army Force Generation* (Washington D.C., December 1, 2006), slides #18 and 23.

requirements, the Army is pulling forces from the “ready” pool, reducing a unit’s dwell time<sup>138</sup> and shortening the amount of time a BCTs is spending in “ready” pool conducting mission preparation training, including joint close air support training. Some Army units have seen the time between deployments reduced to as short as 9-months.<sup>139</sup>

As the Army transitioned to counter-insurgency operations in Iraq and Afghanistan, it requested the Air Force provide JTACs for all deployed maneuver companies. This significantly increased the number of JTACs the Air Force needed to provide, further exacerbating the shortfall created by the Army’s change in size and force structure. The Air Force, not having enough JTACs to meet this new requirement, began pulling JTACs aligned to units in the “ready” force to support units in the “available” force pool. Meeting this requirement to support combat operations had significant second order effects.

TACPs pulled from “ready” units were not available to train with their aligned US Army unit as they were conducting pre-deployment training at their home station.<sup>140</sup> It is not unusual for an Army ground unit to conduct their CTC training with one TACP, deploy with a different TACP, and due to the Air Force’s Air Expeditionary Force (AEF) unit and personnel rotation construct, see their TACP personnel change, sometimes multiple times, in the combat zone.<sup>141</sup>

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<sup>138</sup> Note: Dwell time is defined as a ratio between the time a unit spends deployed versus the time spent non-deployed. For example, a unit deployed for one year then spends one year at home prior to redeploying, would have a 1:1 dwell. The goal under the ARFORGEN construct is for every year deployed and unit would spend two years at home for a 1:2 dwell.

<sup>139</sup> Dickens, interview.

<sup>140</sup> Lucas, interview.

<sup>141</sup> Lucas, interview.

In an interview with the author, Major Christopher Wendland, the fire support coordinator for the 2<sup>nd</sup> Brigade Combat Team, 2<sup>nd</sup> Infantry Division, discussed the effects of the having the TACP change during the BCT's 2007-2008 deployment to Iraq. He stated that the TACP he conducted pre-deployment training with integrated well with the BCT commander and staff. The TACP knew the BCT battle-rhythm and understood the commander's intent for CAS and utilizing joint fires observers.<sup>142</sup> MAJ Wendland discussed how after 4 months in Iraq, his entire BCT TACP swapped out. The new TACP did not fully embrace the joint fires officer concept, which was integral in the BCT's fire support plan, resulting in lost opportunities to employ close air support against enemy positions. Additionally, since they did not conduct any pre-deployment training with the unit, they did not know the BCT CAS battle-drill or the BCT's fire support plan. He went on to say that shortly after this second TACP finally overcame the shortfalls caused by joining the unit in Iraq and became an integral member to the BCT staff, they were swapped out for yet another TACP. During the transition and for a significant period after each TACP change, MAJ Wendland indicated CAS utilization went down based upon a lack in trust and confidence between the ground commander and his primary airpower advisor.<sup>143</sup>

In an interview with the author, Colonel Robert Scurlock, Commander 2<sup>nd</sup> Brigade Combat Team, 1<sup>st</sup> Armored Division, stated that he was very pleased with the

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<sup>142</sup> NOTE: The Joint Fires Observer (JFO) memorandum describes a JFO as a Soldier with "specialized training who can request, adjust and control surface-to surface fires, provide targeting information in support of Type 2 and 3 Close Air Support terminal attack controls...They team with and functions as an extension of the Air Force or other service JTAC's."

<sup>143</sup> MAJ Christopher Wendland, interview by author. *2 BCT, 2ID TACP Integration* (March 12, 2009).



support he received from his TACP during pre-deployment training and during his brigade's deployment to Iraq. A primary reason that home station training was not affected by TACP staffing limitations is that the 1<sup>st</sup> Armored Division is stationed overseas. All the TACP personnel that deployed with, or in-support of COL Scurlock's BCT, came from the ASOS garrisoned with 2 BCT. He commented that the rotation of TACP personnel had minor impacts upon his ability to plan and integrate close air support. Several times during his interview, COL Scurlock emphasized the importance of joint training on his CAS successes.<sup>144</sup>

### **Joint Training at the Combat Training Centers**

Every element involved in joint close air support from the ground commander, to the controllers, and finally to aircrew, need to train together in order to develop trust and confidence in each other. As the Army continues with their objective force transformation and becoming lighter and more dependent upon CAS, the opportunity to train its tactical leaders becomes even more important. Yet, CAS utilization rates at the CTC's continue to decline. The predicament is that except during wartime, Army officers have little exposure to air power and the opportunity to train in a joint environment is usually at one of the ground combat training centers.<sup>145</sup> Since the opportunity to conduct joint training is extremely limited, one could reason that the Services would take advantage of those occasions. In 2005, RAND completed a study on joint training noting that service military training has historically focused on individual

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<sup>144</sup> Colonel Robert Scurlock, interview by author. *2 BCT, 1AD TACP Interaction* (March 26, 2009).

<sup>145</sup> Pirnie, et al., 4.

service competencies, with less emphasis on joint operations.<sup>146</sup> While this focus allows the Services to achieve their individual *Title X* responsibilities, it directly contributes to forces entering combat having little or no training in joint operations.

With the pairing of TAC and TRADOC exercise objectives at the NTC and JRTC prior to the 1986 Goldwater-Nichols Act, the Services backed into joint training without official guidance to conduct joint training. Through the rest of the 1980's and 1990's, and through the early portions of Operations ENDURING FREEDOM and IRAQI FREEDOM, joint training remained comparatively robust. As operations in Iraq and Afghanistan transitioned from major combat operations to stabilization and reconstruction, the training emphasis at the CTC's rightfully changed to reflect the Army's current operating environment. By their nature, stability operations require a smaller percentage of lethal air support and a larger percentage of ISR air support. This shift presents a training conundrum. The former commander of the US Air Force Air Ground Operations Group (AGOG) identified this problem when he said, "Everyone agrees we must get the SASO<sup>147</sup> mission right today-that our forces must be able to employ airpower mainly for non-lethal effects...at the same time, we need to hone lethal skills."<sup>148</sup>

The CTC's shift from a focus on major combat operations to one centered on stability and reconstruction has had first and second order effects on Joint CAS training.

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<sup>146</sup> General Accounting Office. *Actions Needed to Enhance DOD's Program to Transform Joint Training* (Washington D.C.: United States Government, 2005), 3.

<sup>147</sup> SASO: Stability and Support Operations now known as SRO (Stability and Reconstruction Operations).

<sup>148</sup> Dahl, Col Arden B., USAF. "JAGOG: Training Air-Ground Combat Prowess at the NTC and JRTC." *Field Artillery*, September-October 2005, 16.

The first issue contributing to joint training barriers at the CTC's is the primacy of service training objectives. The combat training centers and the airpower exercises that support CTC training are really two separate exercises that occur simultaneously in the same training space. Each service through their service budgets pays their own individual training bill. Therefore, unless a training objective or scenario input accomplishes a specific service goal, there is no requirement for interaction between the training audiences. The Army's training focus is the brigade combat team, while the Air Force lists its training audience as aircrew, tactical air control parties (including air liaison officers and joint terminal attack controllers), and the battle management personnel who staff the various air support operations centers.<sup>149</sup>

The result of each exercise having different training audiences and objectives, but occurring simultaneously, is ultimately one service's training objectives will naturally rise above the others. For example, the BCT conducting their pre-deployment training at a CTC is preparing to deploy to one of the more stable regions in Iraq, while the Air Force flying squadron conducting their Green Flag spin-up training is preparing to deploy to Afghanistan. The training focus of the CTC is on conducting civil-military operations with little or no plans to use CAS, while in the same exercise venue the Air Force needs to mimic Afghanistan operations where CAS is used more frequently. The design and execution of the CTC battle scenario will have little or no consideration for joint CAS training. The BCT battle staffs and TACPs will not plan and execute CAS, including the ground unit CAS battle drill. Recognizing there is little opportunity to integrate CAS

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<sup>149</sup> Information pulled from Army Regulation 350-50, *Combat Training Center Program*, and Commander Air Combat Command *EXPLAN 323, Air Warrior I* and *EXPLAN 323, GREEN FLAG-East*.

with the ground units, the Air Force must conduct training for the aircrew and JTACs outside of the CTC scenario. This results in two exercises that happen concurrently, but with little joint integration occurring.

Another area contributing to ineffective air-ground integration training is the exercise construct. The original exercise construct of the CTC programs was for a major force-on-force or live-fire event to occur after which the rotational unit would reset and prepare for the next event. With the transition to stability and reconstruction operations, the CTC's have extended operations over the entire 24-day. This has led to a corresponding perception that air should be available for the same amount of time.<sup>150</sup> This lack of 24-hour air coverage also can erode trust in the Air Force and perpetuate the belief that they will not be there when needed. The 1990's exercise design construct serves as the basis of the Green Flag program staffing, which only allows them to conduct flight operations approximately 9-hours per day. This was more than adequate to cover a force-on-force engagement or live fire event. Depending on the Army and Air Force training objectives, with suitable time and coordination, the 9-hour window could also shift to cover day only, night only, or day-night training.

The current exercise construct also places an increased emphasis on situational training versus full spectrum operations. Previously, the CTCs validated home unit training and proficiency through exercises tailored to the current operational environment.<sup>151</sup> Recently, the use of situational training exercise (STX) lanes has

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<sup>150</sup> Lt Col Rhude Cherry III, USAF, Commander, 548th Combat Training Squadron, interview by author. *Air-Ground Training at the Joint Readiness Training Center* (January 6, 2009).

<sup>151</sup> United States Army. *Army Regulation 350-50, Combat Training Center Program* (Washington D.C.: Headquarters United States Army, 2003), 1.

increased substantially at the ground combat training centers. The concept behind STX training is to present a training scenario focusing a small training audience on a single task or capability. Some examples of current STX training include cordon and search, convoy live fire, and route clearance. Currently, the first 6-8 exercise days at the CTC's are dedicated to STX training, with the end result being less time spent on full spectrum operations and less opportunity for JCAS training.<sup>152</sup>

To provide training to JTACs and aircrews, Air Force observer/controllers (O/C) at the CTC's have developed a CAS STX lane. While this provides crucial training to the target Air Force audience, it does not involve all entities responsible for the planning and execution of CAS. The primary audience needing the CAS training is maneuver unit battle staff, yet they do not participate in the CAS STX lanes. Once full spectrum operations begin at the CTCs, CAS integration training is still haphazard and not an item of emphasis.<sup>153</sup>

Lt Col Michael Finney, 12<sup>th</sup> Combat Training Squadron Commander, noted that during a typical NTC rotation, a number of factors hamper a brigade's effort to employ CAS, including receiving multiple potential targets generated from a variety of sources, ineffective airspace deconfliction, and lack of qualified air controllers at the right place and at the right time. Gradually, integrating CAS into the exercise became "too hard to do." Lt Col Finney further emphasized that, "Integrating CAS is extremely hard to do

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<sup>152</sup> Cherry III, interview.

<sup>153</sup> Observations of both Lt Col Finney and Lt Col Cherry based upon their experiences as the Senior Air Force observer/controllers from the NTC and JRTC respectively.

with little or no prior planning.”<sup>154</sup> Lt Col Finney went on to describe how it is easy to differentiate between BCT’s that have conducted CAS integration training prior to arriving at the NTC and those who have not.<sup>155</sup> In those units that have conducted training, the ALO are integral members of the fires team, their workspaces are co-located with the FSO, the commander and ALOs both see the cascading effects of the JFO program for CAS targeting, and both the commander and ALO look for ways to include CAS in their concept of operations. The general perception is that BCT staffs intend to employ CAS, but they do not effectively plan to employ CAS. Lt Col Rhude Cherry, the Commander of the 548<sup>th</sup> Combat Training Squadron at Ft. Polk Louisiana, echoed Lt Col Finney’s comments about the lack of planning effecting CAS integration. Lt Col Cherry noted, in the last 11 JRTC rotations covering 132 training days, participating units only executed their CAS Battle Drill three times.<sup>156</sup>

The lack of available TACPs directly contributes to whether or not units conduct CAS training. Lt Col Finney said, “other than the tactics, techniques, and procedures (TTPs) presented in JP 3.09-3, few TTP’s exist to assist the brigade in planning and training for CAS employment.”<sup>157</sup> The BCT staffs are dependent upon their TACP to develop an effectively in-garrison training program and not having a TACP available to conduct that training is crucial impediment to CAS integration. Effectively integrating a

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<sup>154</sup> Lt Col Michael Finney, USAF, Commander, 12th Combat Training Squadron, interview by author. *Air-Ground Training at the National Training Center* (November 13, 2008).

<sup>155</sup> Finney, interview.

<sup>156</sup> Cherry, interview.

<sup>157</sup> Finney, interview.

joint mindset into the psyche of all participants in the CAS process requires actively practicing it, through a regular and repetitive training program.<sup>158</sup>

Training is the single most important task enabling soldiers and aviators to accomplish their duty. It allows them to become familiar with their doctrine, equipment, and their operating procedures in order to know how to integrate air ground operations. Even with the most advanced equipment available, the technological advantage can quickly become moot without proper training. Effective training directly results in increased trust, better integration, better performance, and minimizes the potential for fratricide. If the Services are ever going to operate in an interdependent manner, they must work to rebuild the trust lost through sixty years of interservice squabbling, uncompromising cultural barriers, and inefficient CAS training. General Donn A. Starry, the developer of AirLand Battle doctrine, emphasized the importance of trust when he said, “battle is based on trust, the only way you can trust someone is to train with them.”<sup>159</sup>

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<sup>158</sup> Holley, 542.

<sup>159</sup> Starry, "AirLand Battle."

## Chapter 3

### Enablers to Joint Air-Ground Training

*We need to train like we fight, and fight like we train, and, too often, we don't*<sup>160</sup>

- Donald Rumsfeld, Secretary of Defense

In his 2005 *Joint Forces Quarterly* article “How Joint Are We and Can We Be Better,” Army LTC Chuck Harrison, asserts the “U.S. military does not have a system in place to institutionalize, direct, or even require joint training.”<sup>161</sup> While his statement about requiring joint training is correct, it was previously shown the Army and Air Force have had a habitual joint training relationship since the early 1980’s. Since their inception, the Army’s Combat Training Centers have provided the best opportunity for joint Army-Air Force CAS training, yet integrated training there has significantly decreased since 2002.

### Joint Effects Training

Seeking ways to improve joint air-ground integration training at the Combat Training Centers, Army and Air Force observer/controllers developed the Joint Effects Training (JET) program. First begun at the NTC in 2004, the JET is a four-phased program, focusing on CAS integration and battle drills.<sup>162</sup> Phase One occurs during the

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<sup>160</sup> Costa, Keith J. "Joint National Training Capability: The Next Wave In Transformation," *Inside The Pentagon*, February 20, 2003, 1.

<sup>161</sup> Harrison, Chuck. "How Joint Are We and Can We Be Better." *Joint Forces Quarterly* (National Defense University Press), no. 38 (3rd Quarter 2005), 14.

<sup>162</sup> Dahl, 16.



NTC Leaders Training Program (LTP) and teaches upcoming rotational unit leaders CAS planning and execution procedures, enabling them visualize success and then incorporate CAS training into their home station training programs. Phase Two is home station training for brigade and battalion battle staffs, including their respective JTACs, fire support officers, and joint fires observers (JFOs), focusing on CAS battle drills. During the final portion of Phase Two, the BCT staff is issued a NTC deployment order, including a JET Annex. The intent is for the BCT staff to arrive at the NTC prepared to integrate joint fires.<sup>163</sup>

When the BCT arrives at the NTC, they complete Phase Three and Phase Four of the JET program. Phase Three is a complete dry run of a combined arms event integrating indirect artillery fires and close air support aircraft. The Phase Four event is a live fire event. By October 2005, 13 BCT's had participated in JET training and all participants recommended continuing with JET training program.<sup>164</sup> While this initiative was extremely successful, the removal of the close air support training module from the NTC LTP plan of instruction temporarily ended the JET program. In March of 2008, Phase Three and Phase Four of the JET program were reinstituted. According to Lt Col Finney, the units that have completed the JET training all recommend its continuation.<sup>165</sup>

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<sup>163</sup> Waters, LTC Mark L., and MAJ James A. Frick. "CAS Training at the NTC." *Field Artillery* (March-June 2004), 31.

<sup>164</sup> Dahl, 17.

<sup>165</sup> Finney, interview.

If not for the hard work of the Army and Air Force O/C's at the NTC and Nellis AFB, this program would have completely ended.<sup>166</sup>

### **BCT Air-Ground Integration**

Through its role as the lead agent for the DoD training, JFCOM coordinates and supports JFC commanders through more than 70 joint training events, involving 46,000 participants. Recognizing that training specifically tailored for joint objectives does not traditionally include the tactical level, USJFCOM established the Joint Fires Integration and Interoperability Team (JFIIT) in February 2005. JFIIT's 130-member team includes members from all four Services and Department of Defense (DOD) civilians with contractor support. JFIIT's mission is to provide training to joint force commanders and service headquarters in planning, coordinating, and executing joint fires at the tactical level. Additionally, JFIIT assesses joint training programs to determine how well each replicates the joint environment, promotes joint task execution, and assesses the training audience's joint task execution.<sup>167</sup>

Ongoing operations in Iraq and Afghanistan have shown that joint close air support and integration of joint intelligence, surveillance, and reconnaissance (JISR)

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<sup>166</sup> For a more detailed discussion on the NTC JET program refer to:

- (1) Dahl, Col Arden B., USAF. "JAGOG: Training Air-Ground Combat Prowess at the NTC and JRTC." *Field Artillery*, September-October 2005: 14-18.
- (2) Waters, LTC Mark L., and MAJ James A. Frick. "CAS Training at the NTC." *Field Artillery*, March-June 2004: 31.

<sup>167</sup> United States Joint Forces Command. "Joint Fires Integration Interoperability Team," *United States Joint Forces Command*. March 3, 2009. [http://www.jfcom.mil/about/com\\_jfiit.htm](http://www.jfcom.mil/about/com_jfiit.htm) (accessed march 3, 2009), NP.

assets are the two areas requiring the most training.<sup>168</sup> To address these shortfalls JFIIT, in coordination with TRADOC and ACC, developed the BCT air-ground integration (BCT A-GI) training initiative. The design of BCT A-GI program is to augment in-garrison training, pre-deployment training, and mission rehearsal training, by integrating joint concepts into already scheduled training events. It does this by developing and including interdependent, joint training objectives and joint training scenarios throughout all training phases.

The BCT A-GI team utilizes mobile training teams that provide subject matter experts during training development and execution and resources joint assets for home station and CTC training. Another dynamic of BCT A-GI training is the development of joint training objectives that include Air Force training objectives, creating a mutual effort between the participating brigade combat team and associated air support units. Developing interdependent objectives requires every participant's inputs and actions to ensure the event is successful.<sup>169</sup> The ultimate goal is that interdependent joint training becomes the standard, not the exception, at the Combat Training Centers.

Two iterations of the BCT A-GI program are complete, including the mission rehearsal exercises for the 4<sup>th</sup> BCT, 1<sup>st</sup> Cavalry Division at JRTC and the 4<sup>th</sup> BCT, 4<sup>th</sup> Infantry Division at the NTC.<sup>170</sup> While it is too early to determine if the initiative is achieving the desired goals in the AOR, CAS integration for the CTC training is not

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<sup>168</sup> Rierson, William M. "Improving Joint Air-Ground Integration Training." *Army* (March 2008) 24.

<sup>169</sup> Deam, Sean. "Command Focusing on Improving Joint Fires at the Brigade Combat Team and Below." *United States Joint Forces Command* (October 23, 2007), NP. <http://www.jfcom.mil/newslink/storyarchive/2007/no102307.htm> (accessed March 7, 2009), NP.

<sup>170</sup> Cherry III, interview.

significantly better when compared to units not participating in the BCT A-GI program. According to Lt Col Cherry, there was no noted increase in the planning or utilization of CAS during either CTC rotation. Lt Col Cherry gave two potential reasons for the lack of air-ground integration during the BCT A-GI events. First, he said the scenario lacked any specific emphasis on joint close air support training. The second contributing factor was the lack of effective training in-garrison.<sup>171</sup> These observations continue to support previous assertions that close air support training is not a service priority. The creativity shown by these programs warrants their recognition, but these programs fall well short of solving the Army-Air Force close air support joint training issue.

A review of current fratricide data will show that as joint CAS training has declined so has the number of fratricide incidents leaving one to conclude there is no correlation between the lack of joint training and fratricide. What is not included and is extremely difficult to ascertain, is the number opportunities to integrate airpower that the ground commanders did not act upon because they were not comfortable with using close air support or were not confident in the TACP supporting them. While there have been efforts undertaken to minimize fratricide and ensure there is no loss in combat effectiveness, these efforts represent innovative individual efforts by tactical commanders and leaders that have limited support by the institutional Army and Air Force.

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<sup>171</sup> Cherry III, interview.

## Chapter 4

### Recommendations and Conclusions

*Doctrine is, or should be more than a set of manuals on the show. Doctrine must be understood and internalized by commander by the troop units who are expected to employ it. To be understood, doctrine must be actively inculcated by a regular and repetitious training program.<sup>172</sup>*

*- I. B. Holley, Jr.*

To defeat the enemies of the United States, our military must be able to function across the full spectrum of military operations. The U.S. military must have not only the right equipment, but its Soldiers, Sailors, Airmen, and Marines who wield that equipment must have the proper training to prevail in those operations. Where individual service competencies converge, seams develop. The Department of Defense must ensure training crosses those seams. It is even more critical when lethal fires cross those seams and there is a risk to friendly forces. While there are many examples of one service supporting another, close air support is probably the best known and most executed. Because of its very design, delivering lethal fires in close proximity to friendly ground forces has the highest potential gains as well as the highest risk. Because of its risks and rewards, it is hard to comprehend why CAS is one of the least practiced joint training tasks.

Fratricide is an unwanted consequence of war. To those who plan, coordinate, and execute CAS, fratricide is the ultimate mission failure. Many volumes of printed work and years of labor concentrate on eliminating air-ground fratricide. While almost

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<sup>172</sup> Holley, 541.

all recognize the importance of training, few conduct a critical review of the primary joint CAS training venues. This section makes recommendations to improve both in-garrison training and CAS training at the CTC's. Adopting these recommendations will improve the trust and confidence between the ground commander and their TACP. This increased trust will result in better CAS integration at the CTCs and once deployed. Additionally, this section will recommend three actions to ensure the conditions are set for effective joint CAS training at the NTC and JRTC.

Trust and confidence are central to all military efforts. All members of a team must be able to trust the others will be there when called upon and they must have confidence that their team members will perform their tasks properly. This trust does not result from good feelings or heartfelt desires. Small units build trust and confidence in each other through shared experiences. Only by planning and training together can a joint force build the same trust and confidence that successful small units share.<sup>173</sup> It is essential that close air support training present the same opportunity to develop trust and confidence across the entire air-ground team.

### **Recommendations to Improve Joint CAS Training**

#### *In-Garrison Training*

Just as trust and confidence are central to military operations, they are equally important to training. To build trust in the close air support arena, the Army and Air Force must develop a joint training program, beginning with in-garrison training. While

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<sup>173</sup> JP-1, I-4.

specific elements within the CAS chain, like JTACs, JFOs, and CAS aircrew have annual training requirements, there is no requirement for any CAS elements to conduct joint training. Currently, most in-garrison joint training results from individual initiative on the part of the unit commander, their staff, or TACP supporting them. The first recommendation to improve joint close air support training is for the Army and Air Force to develop a combined in-garrison training plan.

In-garrison training must include the brigade, battalion, and company commanders, their staffs to include battle captains, fire support officers, and the Air Force TACP. Common training tasks should include rehearsing the unit CAS battle-drill, reviewing unit CAS standard operating procedures, close air support integration, air planning and request procedures, and if the unit is preparing for a CTC rotation or deployment, training should also include CAS lessons learned and applicable rules of engagement. The experts on the planning and employing of CAS at the brigade, battalion, and company level are the members of the Air Force tactical air control parties. That makes the Air Force the logical choice to lead the development of the training plan.

To ensure continuity across the force, the recently established 93<sup>rd</sup> Air Ground Operations Wing (AGOW) should serve as the lead for force and development. Since it is the only wing in the Air Force organized and charged with focusing on USAF ground combat units, the 93<sup>rd</sup> AGOW is the logical choice to lead this effort. The 93<sup>rd</sup> AGOW could develop an in-garrison training program for worldwide TACP use. Understanding that units are located across the globe and support multiple areas of responsibility, portions of the courseware will require local development.

Next, the Air Force must source and fill all TACP/JTAC requirements. Fixing the previously discussed shortfalls in TACP manning will go a long way in helping solve many of the pre-deployment training problems. The Air Force TACP forms the nucleus of the in-garrison training programs. Ensuring there is a competent and capable corps of instructors is crucial to any training plan. If the ground commander sees a different TACP during each step of their pre-deployment training, then one or two different TACPs during overseas contingency operations, it is extremely difficult to develop the trust and confidence CAS requires. CMSgt Lucas, the Air Combat Command Tactical Air Control Specialist Functional Manager, acknowledged this requirement and said the Air Force has the necessary budgetary commitments that will allow it to meet its JTAC requirement by 2013, but more likely by 2011.<sup>174</sup> CMSgt Lucas did indicate one potential shortfall in the plan. The current dwell time for JTAC's is 1:1, and that is having a negative impact on the retention of tactical air control specialists. On March 13, 2009, recognizing the importance continuity has in building a "cohesive and integrated combat team," the Air Force directed all air liaison officers and senior tactical air control specialist at brigade level and above, will complete pre-deployment training, deploy and re-deploy with the same unit.<sup>175</sup> Once filling all JTAC positions, the Air Force should consider applying that policy across all TACP members.

Equally crucial in building trust between the Army and Air Force is the creation of a cadre of officers to lead the tactical air control parties. Besides creating continuity

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<sup>174</sup> Lucas, interview.

<sup>175</sup> HQ USAF A3/5, *TACP Training and Deployment Alignment*, GENADMIN Message DTG: 131800Z MAR 09.



within the Air Force portion of the air-ground system, these officers can be productive advocates for airpower. In 2008, the RAND Corporation, in a report sponsored by the Air Force, recommended establishing a “nonrated ALO career field.”<sup>176</sup> The success of enlisted JTACs during recent operations in Afghanistan and Iraq proves you do not need to be a rated officer to be an effective attack controller. While, initially it may appear the Air Force is again abandoning the CAS mission, the Army is “concerned about effectiveness.”<sup>177</sup> If non-rated ALOs prove themselves an integral member of the team, these concerns will pass in time. Establishing an ALO career field, much like combat controllers, would go a long way to building the trust and confidence between ground maneuver commanders and their tactical air control party.

#### *Combat Training Center Improvements*

Earlier this paper discussed how the Air Force’s Green Flag exercise program and the Army’s CTC exercises are two independent events that occur simultaneously. While both exercises provide pre-deployment spin-up training for their respective service, joint close air support training has suffered due to the lack of common integrated training scenarios. Much as the Services must develop an in-garrison joint training program, they must also develop joint training objectives for the CTCs and develop a scenario that meets agreed upon joint training objectives. The Services must hearken back to partnership between TRADOC and TAC during the early 1980s and establish a formal

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<sup>176</sup> Manacapilli, Thomas, and Steven Buhrow. *Feasibility of an Air Liaison Officer Career Field: Improving the Theater Air-Ground System* (Santa Monica: RAND Corporation, 2008), 49.

<sup>177</sup> Manacapilli and Buhrow, 45.

agreement that specifies what each service will provide the other during these training events. Until a formal agreement is in place, US Joint Forces Command, through the Joint Fires Interoperability Integration Team, can mediate joint training objectives and assess the inclusion of joint air-ground integration into each training venue. One limitation of this recommendation is that JFIIT does not have an enforcement mechanism; therefore, a service may ultimately reject JFIIT scenario inputs.

The next recommendation is for the CTCs to incorporate higher headquarters directed CAS events via a fragmentary order, more commonly known as a FRAGO. A CAS FRAGO could task the BCT to use air power to destroy targets on the edges of the BCT's battle space or to conduct out-of-sector operations. These FRAGOs will test the BCT's ability to plan and execute CAS in any or all of the CTC training environments without interrupting the remaining of the training scenarios execution. These missions should be complex enough to require close coordination between the BCT and its higher headquarters. In keeping with the emphasis on OIF/OEF operations, targets could include vehicle-borne improvised explosive devices (VBIED), their manufacturing facilities, enemy weapons caches or other urban targets.<sup>178</sup> It is important that both the ground and air forces have a realistic and visible enemy to engage.

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<sup>178</sup> The use of FRAGOs is not a new concept but its use has fallen off in conjunction with the decline in CAS utilization rates.

## Conclusions

*Although simple in concept, CAS requires detailed planning, coordination, and training for effective and safe execution.*<sup>179</sup>

*JP 3-09.3*

Service Title 10 (USC) responsibilities are inversely proportional to joint integration at the Strategic, Operational, and Tactical levels of war. The Services have great responsibility, while also claiming near-absolute authority, to man, organize, train, and equip their forces at the tactical level. Indeed, the tactical level of war is where the individual Services ply their trade most frequently and to best effect. Service Title 10 responsibilities diminish as the level of war rises to operational and then strategic levels. While the Services' responsibilities diminish, the Combatant Commanders responsibilities increase, including assuming some responsibilities that appear to be reserved for the Services. This includes organizing and training their assigned forces. At the strategic and certainly operational level of war, US Combatant Command commanders have more responsibility than Service chiefs. This is the Clausewitzian dichotomy between "preparing for war" and "war proper." Services prepare the force for war; Combatant Commanders fight the "war proper." Conflict or problems occur when the requirements for joint training like CAS, extend down to the tactical level. Services view this domain as their territory and guard it jealously. This attitude makes it hard to practice jointness. The limited success of the joint close air support training is one example.<sup>180</sup>

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<sup>179</sup> JP 3-09.3, I-1.

<sup>180</sup> Dr. Bryon Greenwald, interview by author. *Jointness* (April 22, 2009).

Close Air Support is a tremendous combat multiplier and has shown its value in every war since World War I. The sixty plus year relationship between the Army and Air Force regarding close air support has been tumultuous at best. Both Services were guilty of failing to heed the lessons learned in World War II and allowing CAS doctrine, tactics, and aircraft to atrophy between World War II and Korea. While the conditions were different between Korea and Vietnam, the results were the same.<sup>181</sup> Following Vietnam however, the Army and Air Force began to cooperate on CAS and achieved impressive results in DESERT STORM, ENDURING FREEDOM, and IRAQI FREEDOM. Close air support is a symbiotic relationship between the Army and Air Force, which has often floundered and required formal mediation from Department of Defense or Congressional leaders. The Services have occasionally sought to overcome their historical differences; yet compromises over doctrine, organization, and resource allocation have done little to overcome the differences between the service's views on how to use airpower in support of ground operations.

The possibility of fratricide increases due to friction between the Army and Air Force. It has been shown that service perspectives shaped by their history, culture, and doctrine have helped bolster this friction. The Services must reverse the erosion of trust resulting from this friction if they ever want to create a true joint close air support team. The first hurdle is to correct the lack of effective joint training. Despite best intentions, fratricide has been, and probably will continue to be, a significant source of combat casualties. In military operations involving allies, fratricide between countries can cause

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<sup>181</sup> Fedorchak 1994, 23.

international friction at a time when strong cooperation is of utmost importance.<sup>182</sup> The political and psychological cost of losses due to fratricide will always be greater than losses inflicted by an enemy. Therefore, it demands the efforts of all involved in the planning and execution of CAS be provided the maximum opportunity to train together to minimize the potential of fratricide.

Recent initiatives, such as the Joint Fires Interoperability and Integration Team's BCT air-ground integration (BCT A-GI) initiative are admissions that joint CAS training is not as efficient as desired. While these initiatives are good attempts at solving the joint CAS training problem, prior to real change occurring ideological differences must be recognized and ideally reconciled. While this may seem impractical given the history between the Services, it does not mean we should dismiss the concept.

US Air Force tactical air control party personnel provide the vital link between Army battlefield commanders and fixed-wing aircraft providing close air support, independent of the service providing the CAS aircraft. This relationship, by definition, makes CAS a joint service issue. CAS will never reach its full potential if the Army and the Air Force are strangers who meet on the battlefield. Airmen must recognize the unique demands of CAS and accord it a central place in the training of aircrew and tactical air control party members. Sixty plus years of inter-service sniping is the cause of distrust, misunderstanding, and separate training. Only by training together at the Combat Training Centers can soldiers experience the enormous advantage of having friends in the air and airmen grasp how best to help their friends on the ground.

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<sup>182</sup> Evans, Michael. "Friendly-fire killing of Matty Hull was Criminal and Unlawful, says Coroner." *Times Online* (March 17, 2007), <http://www.timesonline.co.uk/tol/news/uk/article1527822.ece> (accessed January 3, 2009), NP.

## APPENDIX A: CAS FRIENDLY FIRE EVENTS

Training Incidents					
Date	Location	Quick Narrative	Casualties	Investigation	Conclusions
July 18, 1995	Fort Sill, Oklahoma	An Air Force Reserve A-10 aircraft dropped a 500-pound bomb on a forward observation post.	One person was killed and 13 others injured.	Complete	TTP
April 19, 1999	Atlantic Fleet Weapons Training Facility, Vieques Island, Puerto Rico	A Marine FA-18C dropped two 500-pound bombs that impacted outside the live impact area but within the confines of the range	One person was killed and 4 others injured.	Complete	Training & TTP
March 12, 2001	Udairi Range, Kuwait	A Navy F/A-18C dropped three 500-pound bombs on an observation post during a night exercise.	Six people were killed and 11 others injured.	Complete	Training & TTP
June 22, 2003	Djibouti	A USAF B-52 dropped on observation Post.	One Killed, eight injured	Complete	Training & TTP
April 8, 2008	Utah Test and Training Range	A USAF F-16 strafed a vehicle driving on the UTTR	Two injured	Complete	Training
Friendly Fire Incidents					
Date	Location	Quick Narrative	Casualties	Investigation	Conclusions
November 26, 2001	Mazar-e Sharif, Afghanistan	A Navy F/A-18 aircraft dropped a joint direct attack munition that exploded near friendly forces.	No fatalities and 5 others injured.	Ongoing	TTP
December 5, 2001	Afghanistan	A B-52 bomber dropped a joint direct attack munition that exploded near friendly forces.	Three people were killed and 19 others injured.	Complete	Training & TTP
March 2, 2002	Terghul Ghar, Afghanistan	During Operation Anaconda, an AC-130 engaged coalition forces, mistaking them for the enemy.	One person was killed and 3 others injured.	Complete	Training & TTP
March 23, 2003	An Nasiriyah, Iraq	Two USAF A-10's engage a USMC AAV company.	One Killed, ten wounded	Complete	TTP
March 28, 2003	Al Quam, Iraq	Two USAF A-10's engage a three UK armored reconnaissance vehicles	One killed, four wounded	Complete	SA
April 6, 2003	Debecka, Iraq	Two USN F-14's engage SOF Team escorting Pesmerga/Kurdish Democratic Party	18 Kurds and 1 civilian interpreter were killed and 40 Kurds, 2 US mil and 4 civ reporters were injured.	Complete	Training & TTP
September 4, 2006	Panjwayi, Afghanistan	During Operation Medusa, two U.S. A-10's strafed NATO forces	One person killed and at least 30 wounded	Complete	Training
August 23, 2007	Helmand, Afghanistan	A USAF F-15 called in to support British ground forces in Afghanistan drops a bomb on those forces	Three persons killed, two injured	Ongoing	Unknown

Source: US Joint Forces Command, Joint Capabilities Integration and Fires Division (J-85)

## APPENDIX B: GREEN FLAG UTILIZATION RATES

GREEN FLAG Exercise Summary					
Exercise	Sorties Flown	Sorties Available to BCT	Sorties Used	Utilization Rate*	Percent Lethal
GFW FY07	1994	693	234	33.8	6.8
GFW FY08	2673	1229	595	48.4	11.3
GFE FY07	1091	370	249	67.3	6.5
GFE FY08	1032	143	133	93.0	6.3
Total	6790	2435	1211	49.7	9.0

\* - Utilization rates are for all sorties utilized by the ground units conducting mission rehearsal training.

GREEN FLAG-WEST Exercise Summary						
Exercise	Sorties Flown	Sorties Available to BCT	Sorties Used	Utilization Rate	Percent Lethal	Remarks
<b>FY07</b>						
Ex 07-01	106	0	0	N/A	0.0	No Army Brigade
Ex 07-02	217	142	22	15.5	1.4	
Ex 07-03	0	0	0	N/A	0.0	No Exercise
Ex 07-04	420	207	70	33.8	16.4	
Ex 07-05	190	0	0	N/A	0.0	No Army Brigade
Ex 07-06	334	0	0	N/A	0.0	No Army Brigade
Ex 07-07	91	54	23	42.6	3.7	
Ex 07-08	37	22	7	31.8	0.0	
Ex 07-09	422	182	59	32.4	4.4	
Ex 07-10	177	86	53	61.6	1.0	
Total	1994	693	234	33.8	6.8	
<b>FY08</b>						
Ex 08-01	242	71	17	23.9	11.3	
Ex 08-02	359	130	65	50.0	10.8	
Ex 08-03	231	139	88	63.3	5.8	
Ex 08-04	239	127	22	17.3	3.9	
Ex 08-05	219	52	0	0.0	0.0	Misaligned rotation
Ex 08-06	0	0	0	N/A	0.0	No Air Participation
Ex 08-07	333	164	85	51.8	15.2	
Ex 08-08	461	239	147	61.5	3.8	
Ex 08-09	389	215	119	55.3	23.3	
Ex 08-10	200	92	52	56.5	21.7	
Total	2673	1229	595	48.4	11.3	

Source: 549 CTS, GREEN FLAG-West

GREEN FLAG-East Exercise Summary						
Exercise	Sorties Flown	Sorties Available to BCT	Sorties Used	Utilization Rate	Percent Lethal	Remarks
<b>FY07</b>						
Ex 07-01	81	23	9	39.1	0.0	
Ex 07-02	69	34	22	64.7	5.9	
Ex 07-03	45	23	15	65.2	0.0	
Ex 07-04	147	0	0	N/A	0.0	No BCT
Ex 07-05	77	47	38	80.9	10.6	
Ex 07-06	64	50	33	66.0	0.0	
Ex 07-07	185	80	34	42.5	7.5	
Ex 07-08	262	46	43	93.5	6.5	
Ex 07-09A	126	48	36	75.0	10.4	
Ex 07-09B	35	19	19	100.0	15.8	
Total	1091	370	249	67.3	6.5	
<b>FY08</b>						
Ex 08-01	187	40	34	85.0	10.0	
Ex 08-02	0	0	0	N/A	0.0	No Air
Ex 08-03	182	0	0	N/A	0.0	No BCT
Ex 08-04	178	0	0	N/A	0.0	No BCT
Ex 08-05	120	27	27	100.0	7.4	
Ex 08-06	104	35	31	88.6	2.9	
Ex 08-07	87	0	0	N/A	0.0	No BCT
Ex 08-08	0	0	0	N/A	0.0	Ex Realigned
Ex 08-09	85	22	22	100.0	0.0	
Ex 08-10	89	19	19	100.0	10.5	
Total	1032	143	133	93.0	6.3	

Source: 548 CTS, GREEN FLAG-East



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## VITA

Lieutenant Colonel Phillip B. Barks graduated from Northern Arizona University in 1988 with a Bachelor of Science in Political Science and was commissioned through the Reserve Officer Training Corps. He holds a Master of Aviation Operations from Embry-Riddle Aeronautical University, a Master of Military Operational Art and Science, from Air Command and Staff College and is a graduate of Squadron Officer School, Air Command and Staff College, and Air War College.

He has served as an OV-10 pilot and forward air controller, an A-10, and O A-10 pilot, instructor pilot, flight examiner, flight commander, director of operations and squadron commander. Additionally, he has served as an air liaison officer and ground forward air controller during Operations DESERT STORM. He also participated in Operations SOUTHERN WATCH and IRAQI FREEDOM. Prior to assuming his current position, Lieutenant Colonel Barks served as Commander, 549<sup>th</sup> Combat Training Squadron, Nellis AFB, NV, where he was responsible for the planning and execution of the GREEN FLAG-West exercise.

Lieutenant Colonel Barks has been married to the former Susan Hartis for 13 years and has two children, Sarah and Alexander.